STUDIES

OF

NATURE.

VOL. II.

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STUDIES

OF

N A T U R E.

BY

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DE SAINT-PIERRE.

........MISERIS SUCCURRERE DISCO.

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STUDIES

OF

NATURE.

STUDY SEVENTH.

REPLIES TO THE OBJECTIONS AGAINST PROVIDENCE, FOUNDED ON THE CALAMITIES OF THE HUMAN RACE.

THE arguments deduced from the varieties of the Human Race, and from the evils accumulated by the hand of Nature, by Governments, and by Religions, on the head of Man, attempt to demonſtrate, that men have neither the ſame origin, nor any natural ſuperiority above the beaſts; that their virtues are deſtitute of all proſpect of reward, and that no Providence watches over their neceſſities, to ſupply them.

We ſhall enquire into thoſe evils, one after another, beginning with ſuch as are imputed to Nature; the neceſſity and utility of which we ſhall endeavour to make appear; and ſhall afterwards demonſtrate,

demonſtrate, that political evils are to be aſcribed entirely to deviations from the law of Nature, and conſtitute, themſelves, a proof of the exiſtence of a Providence.

Our diſcuſſion of this intereſting ſubject ſhall commence with a reply to the objections founded on the varieties of the human ſpecies. We pretend not to deny, that there are men black and white, copper-coloured, and pale. Some have a beard, others little, if any. But theſe pretended characters are accidents merely, as has been already ſhewn. Horſes white, bay or black, with frizzled hair, as thoſe of Tartary, or with ſleek ſmooth hair, as thoſe of Naples, are unqueſtionably animals of the ſame ſpecies. The *Albinos*, or white Negros, are a ſpecies of Lepers; and no more form a particular race of Negros, than perſons with us who have been marked by the ſmall-pox form a race of ſpotted Europeans.

Though it does not enter into my plan here to detail all the natural adaptations, which may be oppoſed to all the accuſations of our wretched ſyſtems of Phyſics, and, though I have reſerved, in the proſecution of this undertaking, ſome Studies expreſsly devoted to this object, as far as my poor ability enables me, I ſhall, however, by the way, obſerve, that the black colour is a bleſſing of Pro-

vidence

vidence to the inhabitants of tropical countries. White reflects the rays of the Sun, and black absorbs them. The first, accordingly, redoubles his heat, and the second weakens it. Experience demonstrates this in a thousand different ways. Nature has employed, among other means, the opposite effect of these colours, for multiplying, or weakening, on the Earth, the heat of the Orb of day. The farther you advance toward the South, the blacker are men and animals; and the farther you proceed northward, the whiter is the colour of both the one and the other. Nay, when the Sun withdraws from the northern regions, many animals which were there, in Summer, of different colours, begin to whiten; such as squirrels, wolves, hares... ..and those of the southern regions, to which he is approaching, then clothe themselves with tints deeper and more absorbent. Such are, in the feathery race, the *widow*, the cardinal, &c., which exhibit much more powerful colouring, when the Sun approaches toward the Line, than when he is retiring from it. It is, therefore, by adaptations of climate, that Nature has made the inhabitants of the torrid Zone black, as she has whitened those of the icy Zones. She has given, besides, another preservative against the heat to the Negros who inhabit Africa, which is the hottest part of the Globe, principally by reason of that broad belt of sand which crosses it, and whose utility

utility we have indicated. She has covered the head of thoſe careleſs and uninduſtrious tribes, with a fleece more criſp than a tiſſue of wool, which effectually ſhelters it from the burning heat of the Sun. They are ſo perfectly ſenſible of it's accommodation to this purpoſe, that they never employ a ſubſtitute head dreſs; and there is no deſcription of Mankind among whom artificial coverings, as bonnets, turbans, hats, &c. are more rare, than among the Negros. They uſe ſuch as are foreign to them, merely as objects of vanity and luxury, and I do not know of any one that is peculiar to their Nation. The inhabitants of the peninſula of India are as black as they; but their turbans communicate to the hair, which, but for their head dreſs, would, perhaps, be frizzled, the facility of growing and expanding.

The American tribes which inhabit under the Line, are not black, it muſt be admitted; they are ſimply copper-coloured. I aſcribe this weakening of the black tint to ſeveral cauſes peculiar to their country. The firſt is, the univerſal practice of rubbing themſelves over with *roucou* (a kind of ſweet-ſcented paſte) which preſerves the ſurface of their ſkin from the too vehement impreſſion of the Sun. Secondly, they inhabit a country clothed with foreſts, and croſſed by the greateſt river in the World, which covers it with vapours. Thirdly, their

their territory riſes inſenſibly from the ſhores of Braſil, up to the mountains of Peru; which, giving it a greater elevation in the Atmoſphere, procures for it, likewiſe, a greater degree of coolneſs. Fourthly, in a word, the Eaſt-winds, which blow there inceſſantly, night and day, are always contributing to that coolneſs.

Finally, the colour of all thoſe Nations is ſo much the effect of Climate, that the deſcendants of Europeans, ſettled there, aſſume the black tint after a lapſe of ſome generations. This is evidently perceptible in India, in the poſterity of the Moguls, tribes derived from the extremity of Aſia, whoſe name ſignifies *whites*, and who are this day as black as the Nations which they have conquered.

Tallneſs of ſtature no more characterizes ſpecies, be the genus what it may, than difference of colour. A dwarf and a large apple-tree proceed from the ſame grafts. Nature, however, has rendered it invariable in the Human Species alone, becauſe variety of magnitude would have deſtroyed, in the phyſical order, the propostions of Man with the univerſality of her productions, and becauſe it would have involved, in the moral order, conſequences ſtill more dangerous, by ſubjecting, beyond

beyond recovery, the ſmaller ſpecies of Mankind to the greater.

There are no races of dwarfs, nor of giants. Thoſe which are exhibited at fairs, are little men contracted, or tall over-grown fellows, without proportion and without vigor. They re-produce not themſelves either in miniature or magnitude, whatever pains may have been taken by certain Princes to procure a diſtinct propagation; among others, by the late King of Pruſſia, Frederic II. Beſides, Do ſufficient varieties of proportion of the Human Species iſſue from the hand of Nature to merit the diſtinctive appellation of dwarfs and giants? Is there between any two of them ſo great a difference, as between a little Sardinian poney and a huge Brabant horſe; as between a ſpaniel, and one of the large Daniſh dogs which run before our coaches?

All nations have been from the beginning, and ſtill are, with very little difference, and very few exceptions, of the ſame ſtature. I have ſeen Egyptian Mummies, and the bodies of the *Guanches* * of the Canary iſlands wrapped up in their

* GUANCHES, are the ſkeletons, covered with the ſkin, of the original inhabitants of the Canary Iſlands. The body of the Guancho

their ſkins. I have ſeen in Malta, in a tomb hewn out of the ſolid rock, the ſkeleton of a Carthaginian, all the bones of which were violet-coloured, and which had, perhaps, lain there from the days of Queen Dido. All theſe bodies were of the common ſize. Enlightened and ſober-minded Travellers have reduced to a ſtature hardly exceeding our own, the pretended gigantic form of the Patagonians. I am aware that I have elſewhere alleged theſe ſame reaſons; but it is impoſſible to repeat them too frequently, becauſe they overturn, beyond the poſſibility of contradiction, the pre-

Guancho was depoſited in a cavity adapted to it's ſize, hewn out of the rock. The ſtone being of a porous nature, the animal juices were abſorbed, or filtered through, and the ſolid parts, with their natural ſkinny mantle, became indurated, by a proceſs of natural embalming, to ſuch a degree as to reſiſt the future aſſaults of time. They are ſtill exhibited, by the natives of thoſe iſlands, to ſtrangers who viſit them, with emotions of pride and veneration; as the images of their illuſtrious anceſtors were oſtentatiouſly diſplayed by the Patrician families of Rome. Avarice has, however, infected the Canaries, as well as more enlightened Iſlands; and families have been prevailed on to part with their *Guanches* to the Muſeums of European Collectors of Curioſities, for a little ready money, or in conſideration of a large order of wines.

——Quid non mortalia pectora cogis,
Auri ſacra fames!

in plain Engliſh, *The love of money will make a man ſell his father.* H. H.

tended influences of Climate, which are become the principles of our Phyſics, and, what is ſtill worſe, of our Morality.

There were formerly, we are told, real giants. The thing is poſſible; but this truth is become to us inconceivable, like all others of which Nature no longer furniſhes any teſtimony. If Polyphemuſes, lofty as a tower, ever exiſted, every ſtep they took in walking muſt, in moſt ſoils, have ſunk into the ground. How could their long and clumſy fingers have milked the little ſhe-goats, reaped the corn, mowed down the graſs, picked the fruits of the orchard? The greateſt part of our aliments would eſcape their eyes as well as their hands.

On the other hand, had there been generations of pigmies, how could they have levelled the foreſts to make way for the cultivation of the earth? They would have loſt themſelves among the ruſhes. Every brook would have been to them a river, and every pebble a rock. The birds of prey would have carried them off in their talons, unleſs they made war upon their eggs, as *Homer* repreſents his pigmy race engaged in war with the eggs of cranes.

On

On either of theſe two ſuppoſitions, all the relations of natural order are burſt aſunder, and ſuch diſcords neceſſarily involve the utter deſtruction of all ſocial order. Suppoſe a nation of giants to exiſt poſſeſſed of our induſtry, and inſtigated by our ferocious paſſions. Let us place at the head of it, a *Tamerlane*, and ſee what would become of our fortifications and of our armies before their artillery, and their bayonets.

As much as Nature has affected variety in the ſpecies of Animals of the ſame genus, though they were to inhabit the ſame regions, and to ſubſiſt on the ſame aliments, ſo much has ſhe ſtudied uniformity in the production of the Human Species, notwithſtanding the difference of Climates and of food. The accidental prolongation of the coccyx, in ſome human individuals, has been miſtaken for a natural character, and a new ſpecies of men with tails, has been grafted on a principle ſo flimſy. Man may degrade himſelf to the level of the beaſt, by the indulgence of brutal appetite; but never was his noble form diſhonoured by the tail, the forked feet, and the horns of the brute. In vain is the attempt made to trace an approximation of Man toward the claſs of mere animals, by inſenſible tranſitions.

Were

Were there any human race in animal forms, or any animal endowed with human reaſon, they would be publicly exhibited. We ſhould have them in Europe, eſpecially in times like theſe, when the whole Globe is pervaded and ranſacked by ſo many enlightened Travellers; and when, I do not ſay Princes, but puppet-players import alive into our fairs, the zebra ſo wild, the elephant ſo lumpiſh, tigers, lions, white bears, nay, up to crocodiles; which have all been preſented to public inſpection in London.

Vain is the attempt to eſtabliſh analogies between the human female, and the ſhe-orang-outang, from the ſituation and configuration of the boſom, from the periodical ſexual purgations, from the attitude, and even from a ſort of modeſty. Though the female orang-outang paſſes her life in the woods, *Allegrain*, ſurely, as has been obſerved, never could have modelled after her, his ſtatue of Diana, which is ſhewn at Lucienne. There is a much greater difference ſtill between the reaſon of Man and that of the beaſts, than there is between their forms; and that man's muſt have been ſtrangely perverted, who could advance, as a celebrated Author has done, that there is a greater diſtance between the underſtanding of *Newton*, and that of ſuch or ſuch a man, than between the underſtanding

derſtanding of this man and the inſtinct of an animal. As we have already ſaid, the dulleſt of Mankind can learn the uſe of fire, and the practice of agriculture, of which the moſt intelligent of animals is abſolutely incapable; but what I have not yet ſaid, the ſimple uſe of fire, and the practice of agriculture, are far preferable to all *Newton*'s diſcoveries.

Agriculture is the art of Nature, and fire her primary agent. From experience we are aſſured, that men have acquired by means of this element and of this art a plenitude of intelligence, of which all their other combinations, I venture to affirm, are merely conſequences. Our Sciences and Arts are derived, for the greateſt part, from theſe two ſources, and they do not conſtitute a difference more real between the underſtanding of one man and another, than there is between the dreſs and furniture of Europeans and thoſe of Savages. As they are perfectly adapted to the neceſſities of the one and of the other, they eſtabliſh no real difference between the underſtandings which contrived them. The importance which we aſſign to our talents, proceeds not from their utility, but from our pride. We ſhould take a material ſtep toward it's humiliation, did we conſider that the animals which have no ſkill in agriculture, and know not the uſe of fire, attain to the greateſt part

part of the objects of our Arts and Sciences, and even surpass them.

I say nothing of those which build, which spin, which manufacture paper, cloth, hives, and practise a multitude of other trades, of which we do not so much as know. But the torpedo defended himself from his enemies by means of the electric shock, before Academies thought of making experiments in electricity; and the limpet understood the power of the pressure of the air, and attached itself to the rocks, by forming the vacuum with its pyramidical shell, long before the air-pump was set a going. The quails which annually take their departure from Europe, on their way to Africa, have such a perfect knowledge of the autumnal Equinox, that the day of their arrival in Malta, where they rest for twenty-four hours, is marked on the almanacks of the island, about the 22d of September, and varies every year as the Equinox. The swan and wild duck have an accurate knowledge of the Latitude where they ought to stop, when, every year they re-ascend, in Spring, to the extremities of the North, and can find out, without the help of compass or octant, the spot where the year before they made their nests. The frigat which flies from East to West, between the Tropics, over vast Oceans interrupted by no Land, and which regains at night, at the distance of many

many hundred leagues, the rock hardly emerging out of the water which he left in the morning, poſſeſſes means of aſcertaining his Longitude, hitherto unknown to our moſt ingenious Aſtronomers.

Man, it has been ſaid, owes his intelligence to his hands: but the monkey, the declared enemy of all induſtry, has hands too. The ſluggard, or ſloth, likewiſe has hands, and they ought to have ſuggeſted to him the propriety of fortifying himſelf: of digging, at leaſt, a retreat in the earth, for himſelf and for his poſterity, expoſed as they are to a thouſand accidents, by the ſlowneſs of their progreſſion. There are animals in abundance furniſhed with tools much more ingenious than hands, and which are not, for all that, a whit more intelligent. The gnat is furniſhed with a proboſcis, which is at once an awl proper for piercing the fleſh of animals, and a pump by which it ſucks out their blood. This proboſcis contains, beſides, a long ſaw, with which it opens the ſmall blood-veſſels at the bottom of the wound which it has made. He is likewiſe provided with wings, to tranſport him wherever he pleaſes; a corſlet of eyes ſtudded round his little head, to ſee all the objects about him in every direction; talons ſo ſharp, that he can walk on poliſhed glaſs in a perpendicular direction; feet ſupplied with bruſhes for

for cleaning himſelf; a plume of feathers on his forehead; and an inſtrument anſwering the purpoſe of a trumpet to proclaim his triumphs. He is an inhabitant of the Air, the Earth, and the Water, where he is born in form of a worm, and where, before he expires, the eggs which are to produce a future generation are depoſited.

With all theſe advantages, he frequently falls a prey to inſects ſmaller, and of a much inferior organization. The ant which creeps only, and is furniſhed with no weapons except pincers, is formidable not to him only, but to animals of a much larger ſize, and even to quadrupeds. She knows what the united force of a multitude is capable of effecting; ſhe forms republics; ſhe lays up ſtore of proviſions; ſhe builds ſubterraneous cities; ſhe forms her attacks in regular military array; ſhe advances in columns, and ſometimes conſtrains Man himſelf, in hot countries, to ſurrender his habitation to her.

So far is the intelligence of any one animal from depending on the ſtructure of it's limbs, that their perfection is frequently, on the contrary, in the inverſe ratio of it's ſagacity, and appears to be a kind compenſation of Nature to make up a defect. To aſcribe the intelligence of Man to his hands, is to deduce the cauſe from the means, and

talent

talent from the tool with which it works. It is juſt as if I were to ſay, that *Le Sueur* is indebted for the happy native graces of his pictures to a pencil of ſable's hair; and that *Virgil* owes all the harmony of his verſes to a feather of the ſwan of Mantua.

It is ſtill more extravagant to maintain, that human reaſon depends on Climate, becauſe there are ſome ſhades of variety in manners and cuſtoms. The Turks cover their heads with turbans, and we cover ours with hats; they wear long flowing robes, and we dreſs in coats with ſhort ſkirts. In Portugal, ſays *Montagne*, they drink off the ſediment of wines, we throw it away. Other examples, which I could quote, are of ſimilar importance. To all this I anſwer, that we would act as theſe people, if we were in their country; and that they would act as we do, were they in ours.

Turbans and flowing robes are adapted to hot countries, where the head and body ſtand in need of being cooled, by incloſing in the covering of both a greater maſs of air. From this neceſſity has ariſen the uſe of turbans among the Turks, the Perſians, and Indians, of the mitres of the Arabians, of the bonnets like a ſugar-loaf of the Chineſe and Siameſe, and that of wide and flowing robes, worn by moſt of the Nations of the South.

From

From a contrary neceſſity, the Nations of the North, as the Polanders, the Ruſſians, the Tartars, wear furred caps and cloſe garments. We are obliged to have, in our rainy Climates, three aqueducts upon our head, and garments ſhortened, becauſe of the dirt. The Portugueze drink the ſediment of wine; and ſo would we do with the wines of Portugal; for in ſweet wines, as thoſe of hot countries, the moſt ſugary particles are at the bottom of the caſk; and in ours, which are ſprightly, nothing is at the bottom but mere dregs, the beſt is uppermoſt. I have ſeen in Poland, where they drink great quantities of the wines of Hungary, the bottom of the bottle preſented as a mark of preference. Thus the very varieties of national cuſtoms prove the conſiſtency of human reaſon.

Climate has no greater influence in changing human morality, which is reaſon in perfection. I admit, at the ſame time, that extreme heat and cold produce an effect on the paſſions. I have even remarked, that the hotteſt days of Summer, and the coldeſt of Winter, were actually the ſeaſons of the year when moſt crimes were committed. The dog-days, ſay the vulgar, is a ſeaſon of calamity. I could ſay as much of the month of January. I believe it muſt have been in conformity to theſe obſervations, that ancient Legiſlators had

had eſtabliſhed, for that critical period, feſtivals deſigned to diſſipate the melancholy of Mankind, ſuch as the feaſt of Saturn among the Romans, and the feaſt of Kings * among the Gauls. In each Nation the feſtival was adapted to the public taſte; among the Romans, it preſented the images of a republic; among our anceſtors thoſe of monarchy.

But I beg leave, likewiſe, to remark, that thoſe ſeaſons fertile in crimes, are the ſeaſons, too, of the moſt ſplendid actions. This effervescence of ſeaſon acts on our ſenſes, like that of wine. It produces in us an extraordinary impulſion, but indifferently to good and to evil. Beſides, Nature has implanted in our ſoul two powers, which ever balance each other in juſt proportion. When the phyſical ſenſe, Love, debaſes us, the moral ſentiment, Ambition, raiſes us up again. The equili-

* The *Feaſt of Kings*, I apprehend, is coeval with the Chriſtian Era, and had it's origin in the ſtar-directed viſit of the Eaſtern Magi to Bethlehem of Judah, recorded in the beginning of the ſecond chapter of the Goſpel according to St. Matthew. We can hardly ſuppoſe the ancient Gauls ſo extremely attached to irregular and unſteady Monarchy, as to inſtitute and celebrate annual feaſts in honour of it. Whatever may be in this, modern Gauls can ſay of the political body, what the *Médecin malgré lui* of *Moliere*, ſays, reſpecting the natural body: *We have changed all that.* H. H.]

 brium

brium neceſſary to the empire of Virtue ſtill ſubſiſts, and it is never totally loſt, except in perſons with whom it has been deſtroyed by the habits of ſociety, and more frequently ſtill by thoſe of education. In that caſe, the predominant paſſion, having no longer any counterpoiſe, aſſumes the command of all our faculties; but this is the fault of ſociety, which undergoes the puniſhment of it, and not that of Nature.

I remark, however, that theſe ſame ſeaſons exert their influence on the paſſions of Man, by acting only on his moral, and not on his phyſical principle. Though this reflection has ſomething of the air of paradox, I ſhall endeavour to ſupport it by a very remarkable obſervation. If the heat of Climate could act on the human body, it aſſuredly would be when one is in his mother's womb: for it then acts on that of all animals, whoſe expanſion it accelerates. Father *du Tertre*, in his excellent Hiſtory of the Antilles, ſays, that in thoſe iſlands, the period of geſtation of all European animals is ſhorter than in temperate Climates; and that the hen's eggs are not longer in hatching, than the ſeeds of the orange in burſting their ſhell, twenty-three days. Pliny had obſerved in Italy, that they hatch in nineteen days in Summer, and in twenty-five in Winter.

In

In every country, the temperature of Climate haſtens, or retards, the expanſion of all plants, and the geſtation of all animals, the Human Race excepted: let this be carefully remarked. "In the "Antilles iſlands," ſays Father *du Tertre*, "the "white women and the negreſſes go with child "nine months, as in France." I have made the ſame remark in all the countries through which I have travelled, in the Iſle of France, under the Tropic of Capricorn, and in the extremity of Ruſſian Finland. This obſervation is of conſiderable importance. It demonſtrates that the body of Man is not ſubjected, in this reſpect, to the ſame laws with other animals. It manifeſts a moral intention in Nature, to preſerve an equilibrium in the population of Nations, which would have been deranged, had the pregnancy of the woman been of ſhorter duration in hot countries than in cold. This intention is farther manifeſted in the admirable proportion ſhe maintains in the production of the two ſexes, ſo nearly equal in number, and in the very difference which we find, of one country from another, between the number of males and females: for it is compenſated from North to South, in ſuch a manner, that if there be rather more women born to the South, there are rather more men born to the North; as if Nature meant to attract and to unite Nations, the moſt remote from each other, by intermarriages.

Climate has an influence on morality, but by no means determines it; and though this ſuppoſed determination may be conſidered, in many modern Books, as the fundamental baſis of the Legiſlation of the Nations, there is no one philoſophical opinion more completely refuted by hiſtoric teſtimony. "Liberty," ſay they, "has found "her aſylum in the lofty mountains; from the "North it was that the haughty conquerors of the "World iſſued forth. In the ſouthern plains of "Aſia, on the contrary, reign deſpotiſm, ſlavery, "and all the political and moral vices which may "be traced up to the loſs of liberty."

So then, we muſt go and regulate, by our barometers, and thermometers, the virtues and the happineſs of Nations! There is no neceſſity to leave Europe, in order to find a multitude of monarchical mountains, ſuch as thoſe of Savoy, a part of the Alps, of the Apennines, and the whole of the Pyreneans. We ſhall ſee, on the contrary, many republics in plains, ſuch as thoſe of Holland, of Venice, of Poland, and even of England. Beſides, each of thoſe territories has, by turns, made trial of different ſorts of government. Neither cold, nor ruggedneſs of ſoil, inſpire men with the energy of liberty, and ſtill leſs with the unjuſt ambition of encroaching on that of others. The peaſants of Ruſſia, of Poland, and of the cold mountains

tains of Bohemia, have been ſlaves for many ages paſt; whereas the Angrias, and the Marattahs, are free men and tyrants in the South of India. There are ſeveral republics on the northern coaſt of Africa, where it is exceſſively hot. The Turks, who have laid hold of the fineſt provinces of Europe, iſſued from the mild Climate of Aſia. The timidity of the Siameſe, and of moſt Aſiatics, has been quoted; but it is to be imputed, in thoſe Nations, to the multitude of their tyrants, rather than to the heat of their countries. The Macaſſars, who inhabit the iſland of Célèbes, ſituated almoſt under the Line, are poſſeſſed of a courage ſo intrepid, as the gallant Count *Forbin* relates, that a ſmall number of them, armed with poniards only, put to flight the whole force under his command, at Bancock, conſiſting of Siameſe and French, though the former were very numerous, and the others armed with muſkets and bayonets.

If from courage we make the tranſition to love, we ſhall find that Climate has no more a determining power over Man, in the one caſe than in the other. I might refer myſelf, for proof of the exceſſes of this paſſion, to the teſtimony of travellers, to aſcertain which has the ſuperiority, in this reſpect, the Nations of the South, or thoſe of the North. In all countries love is a torrid Zone to the

the heart of Man. I muſt obſerve, that theſe appropriations of Love to the Nations of the South, and of Courage, to the Nations of the North, have been imagined by our Philoſopers, as effects of Climate, applicable only to foreign nations: for they unite theſe two qualities, as effects of the ſame temperament, in thoſe of our heroes to whom they mean to pay their court. According to them, a Frenchman great in feats of love, is likewiſe great in feats of war; but this does not hold as to other Nations. An Aſiatic, with his ſeraglio, is an effeminate coward; and a Ruſſian, or any other ſoldier of the North, whoſe Courts give penſions, is a ſecond Mars. But all theſe diſtinctions of temperament, founded on Climate, and ſo injurious to Mankind, vaniſh into air, before this ſimple queſtion: Are the turtle-doves of Ruſſia leſs amorous than thoſe of Aſia; and are the tigers of Aſia leſs ferocious than the white bears of Nova Zembla?

Without going to ſeek among men objects of compariſon and contraſt, from difference of place, we ſhall find greater diverſity in manners, in opinions, in habiliments, nay, in phyſiognomy, between an opera-actor and a capuchin-friar, than there is between a Swede and a Chineſe. What a contraſt is the talkative, flattering, deceitful Greek, ſo fondly attached to life, to the ſilent, ſtately, honeſt Turk, ever devoted to death! Theſe men, ſo very

very oppoſite, are born, however, in the ſame cities, breathe the ſame air, live on the ſame food. Their extraction, we ſhall be told, is not the ſame; for pride, among us, aſcribes a mighty influence to the power of blood. But the greateſt part of thoſe Janiſſaries, ſo formidable to the cowardly Greeks, are frequently their own children, whom they are obliged to give in tribute, and who paſs, by a regular proceſs, into this firſt corps of the Ottoman ſoldiery. The courteſans of India ſo voluptuous, and it's penitents ſo auſtere, are they not of the ſame Nation, and, in many caſes, of the ſame family?

I beg leave to aſk, In what inſtance was an inclination to vice or virtue known to be communicated with the blood? *Pompey*, ſo noted for his generoſity, was the ſon of *Strabo*, infamouſly notorious to the Roman people for his avarice. The cruel *Domitian* was brother to the gracious *Titus*. *Caligula* and *Agrippina*, the mother of *Nero*, were, indeed, brother and ſiſter; but they were the children of *Germanicus*, the darling hope of Rome. The barbarous *Commodus* was ſon to the divine *Marcus Aurelius*. What a difference is frequently obſervable in the ſame man, between his youth and his mature age; between *Nero*, ſaluted as the Father of his Country, when he mounted the throne; and *Nero* execrated as it's avowed enemy before

before his death: between *Titus*, ſtigmatized with the name of a ſecond *Nero*, in his youth, and *Titus* at his death, embalmed with the tears of the Senate, of the Roman people, and of ſtrangers; and tranſmitted unanimouſly to poſterity as the delight of mankind?

It is not Climate, then, which regulates the morality of Man; it is opinion, it is education; and ſuch is their power, that they triumph not only over latitudes, but even over temperament. *Ceſar*, ſo ambitious, ſo diſſolute; and *Cato*, ſo temperate and virtuous, were both of a ſickly conſtitution. Place, Climate, Nation, Family, Temperament, no one of theſe, and in no part of the World, determine men to vice or to virtue. They are every where free to chooſe.

Before we take into conſideration the evils which men bring upon themſelves, let us attend to thoſe which are inflicted by the hand of Nature. It is demanded, Why ſhould beaſts of prey exiſt? They are abſolutely neceſſary. But for them the Earth would be infeſted with cadaverous ſubſtances. There periſhes, annually, of a natural death, the twentieth part, at leaſt, of quadrupeds, the tenth part of fowls, and an infinite number of inſects, moſt of the ſpecies of which live only one

year. Nay, there are insects whose life is contracted to a few hours, such as the ephemera.

As the rains convey all these spoils of the land to the rivers, and thence to the Seas, it is, accordingly, on their shores, that Nature has collected the animals which are destined to consume them. Most of the ferocious animals descend by night from the mountains, to hunt for their prey in this direction; there are even several classes created expressly for such situations; as the whole amphibious race; for example, the white bear, the otter, the crocodile. It is in hot countries especially, where the effects of corruption are most rapid and most dangerous, that Nature has multiplied carnivorous animals. Tribes of lions, tigers, leopards, panthers, civet cats, ounces, jackals, hyenas, condors, &c. resort thither, to re-inforce those of wolves, foxes, martens, otters, vultures, crows, &c. Legions of voracious crabs are nestled in their sands; the caimans and the crocodiles lie in ambush among their reeds; shell-fish, of innumerable species, armed with utensils fit for sucking, piercing, filing, bruising, roughen the face of the rocks, and pave the borders of their seas; clouds of sea-fowls hover, with a loud noise, over their shallows, or sail round and round, at the discretion of the waves, in quest of food; the lamprey, the becune, the carang, and the whole species

ſpecies of cartilaginous fiſhes, which live only on fleſh, ſuch as the hygian, the long ſhark, the broad thorn-back, the ſkipper, the polypus, armed with air-holes, and all the varieties of ſea-dogs, ſwim there in crowds, conſtantly employed in devouring the wreck of bodies thrown upon the ſhore.

Nature calls in, beſides, the inſect legions to haſten forward their conſumption. The waſps, furniſhed with ſciſſars, cut aſunder the fleſhy parts; the flies pump out the fluids, the ſea-worms cut in pieces the bones. Theſe laſt on the ſouthern coaſts, and eſpecially at the mouths of rivers, are in ſuch prodigious quantities, and armed with augers ſo formidable, that they are capable of devouring a ſhip of war in leſs time than it coſt to build her; and have thereby reduced the maritime Powers to the neceſſity of lately ſheathing the bottoms of their ſquadrons with copper, as a ſecurity againſt their attacks.

The wrecks of all theſe bodies, after having ſerved for food to the innumerable tribes of other fiſhes, ſome of which are provided with beaks formed like a ſpoon, and others like a pipe, for picking up the very crumbs of this vaſt table; reduced, at length, through ſuch a ſeries of digeſtions, into phlegms, into oils, into bitumens, and united to the pulps of vegetables, which deſcend from

from all quarters into the Ocean, would re-produce in it's waters a new chaos of putrefaction, did not the currents convey their dissolution to volcanos, whose fires finish the process of decomposition, and give them back to the elements. For this reason it is, as has been already indicated, that volcanos are frequent only in hot countries; that they are all situated in the vicinity of the Sea, or of great Lakes; that they are disposed at the extremity of their currents; and that they owe entirely to the purification of the waters, the sulphurs and the bitumens which administer a constant supply to their furnaces.

Animals of prey are by no means an object of terror to Man. First, because most of them roam abroad only in the night. They have prominent characters, which announce their approach even before it is possible to perceive them. Some savour strongly of musk, as the marten, the civet-cat, the crocodile; others have shrill and piercing voices, which may be heard by night, at a great distance, as wolves and jackals; others are distinguished by parti-coloured spots, or streaks, which are perceptible a great way off, on the yellow ground of their skin; such are the dusky stripes of the tiger, and the dark spots of the leopard. All of them have eyes which sparkle in the dark. Nature has bestowed some of these common signa-

tures

tures even on carnivorous and blood-ſucking inſects; ſuch is the waſp, whoſe ground colour is yellow, ſurrounded with rings of black like the tiger, and the gnat, ſpotted with white upon a dark ground, who announces his approach by a loud buzzing. Even thoſe which attack the human body are furniſhed with remarkable indications. They either ſmell ſtrongly, as the bug; or preſent oppoſitions of colour to the places on which they fix, as white inſects on the hair; or the blackneſs of the flea contraſted to the whiteneſs of the ſkin.

A great many Writers exclaim violently on the cruelty of ferocious animals, as if our cities were liable to be invaded by ſwarms of wolves, or, as if bands of lions, from Africa, were, from time to time, making incurſions into our European colonies. They all ſhun the habitations of Man, and, as I ſaid, moſt of them ſtir abroad only in the night. Theſe diſtinctive characters are unanimouſly atteſted by Naturaliſts, Hunters, and Travellers. When I was at the Cape of Good-Hope, M. *de Tolback*, who was then Governor, informed me, that lions were formerly very common in the adjacent country; but that ſince the Dutch had formed a ſettlement there, you muſt travel fifty or ſixty leagues up the country before one is to be ſeen.

After all, what is their ferocity to us? Even ſuppoſing we were not provided with arms, which they are incapable of reſiſting, and with a ſagacity far ſuperior to all their cunning, Nature has given us dogs able to combat, nay, to ſubdue them; and ſhe has moſt admirably adapted their ſpecies to thoſe of animals the moſt formidable. In the countries where lions are natives, there is likewiſe produced a breed of dogs capable of engaging them in ſingle combat. I ſhall quote, after the ancient, but learned tranſlation of *Dupinet*, what Pliny relates of a dog of this ſpecies, which was preſented to Alexander, by a King of Albania *. "King Alexander firſt oppoſed to him a lion, "which the dog preſently tore in pieces. After "that, he ordered to let looſe an elephant, which "afforded him the higheſt diverſion that he ever "had enjoyed. For the dog, briſtling himſelf up "from the firſt, began to wheel about, and ſnarl, "at the elephant; then advanced to the attack, "ſpringing on this ſide and on that ſide, with all "imaginable circumſpection: now leaping up to "aſſault, now couching to the right, to the left, "which cauſed the elephant to turn and wind "about ſo frequently, that he was, at laſt, completely tired out, and fell down with a ſhock "which made the ground tremble, on which the

* Pliny's Natural Hiſtory, book viii. chap. xl.

"dog

"dog ſprung upon him, and diſpatched him." I can hardly think this dog could be of the ſame race with our lap-dogs.

The animals formidable to Man are more to be feared from their ſmallneſs than from their magnitude; there is no one, however, but what may be rendered ſubſervient to his benefit. Serpents, centipeds, ſcorpions, toads, inhabit ſcarcely any other than humid and unwholeſome places, from which they keep us at a diſtance, more by their hideous figures than by their poiſons. Such ſerpents as are really dangerous, give ſignals of their approach; ſuch are the rattles of the ſnake which bears that name. Few perſons periſh by their ſting, and only from their own careleſſneſs and imprudence. Beſides, our pigs and poultry eat them currently, without ſuffering the ſlighteſt inconvenience. Ducks, in particular, devour them with avidity, as they likewiſe do moſt poiſonous plants. Thoſe of the kingdom of Pontus acquired ſo much virtue by aliments of ſuch ſorts, which are common there, that Mithridates employed their blood in his famous counter-poiſons.

There are, it is admitted, noxious inſects which prey upon our fruits, our corn, nay, our perſons. But if ſnails, may-bugs, caterpillars, and locuſts, ravage our plains, it is becauſe we deſtroy the birds

birds of our groves which live upon them; or, becaufe, that on tranfporting the trees of foreign countries into our own, fuch as the great chefnut of India, the ebony, and others, we have tranfported with them the eggs of thofe infects which they nourifh, without importing, likewife, the birds of the fame climate which deftroy them. Every country has thofe peculiar to itfelf, for the prefervation of it's plants. I have feen one, at the Cape of Good-Hope, called the gardener's bird, inceffantly employed in catching the worms and caterpillars, which he ftuck on the thorny prickles of the bufhes. I have likewife feen, in the Ifle of France, a fpecies of ftarling called Martin, which comes from India, and which lives entirely on locufts, and on other infects which infeft the cattle. If we were to naturalize thefe birds in Europe, no fcientific difcovery ever made would be fo beneficial to Man.

But the birds of our own groves are ftill fufficient to clear our plains of noxious vermin, provided the bird-catchers were laid under a prohibition to entrap them, as they do, by whole coveys, in their nets, not to immure them in cages, but to make food of them. A fancy was adopted, fome years ago, in Pruffia, to exterminate the race of fparrows, as inimical to agriculture. Every peafant in the country was fubjected to an annual capitation

capitation tax of twelve heads of that kind of bird, which were employed in the manufacture of salt-petre, for in that country, nothing is suffered to go to waste. At the end of the second, or, at farthest, of the third year, it was discovered that insects had devoured their crops, and it was speedily found advisable to invite the sparrows from neighbouring countries, to re-people the kingdom with them. These birds, it is true, do eat some grains of corn, when the insects fail them; but these last, among others the weevil, consume the grain by bushels, nay, by granaries. If, however, it were possible to extinguish the whole race of insects, it would be the height of imprudence to set about it; for we should destroy, along with them, most of the feathered tribes of our plains, which have no other food for their young while in the nest.

As to the animals which fall upon our corn in the granary, and our woollens in the warehouse, such as rats, mice, mites, moths; I find that the former are useful in purifying the earth from human excrement, which constitutes a considerable part of their food. Besides, Nature has made Man a present of the cat, to clear the interior of his habitation from those vermin. She has endowed this animal not only with uncommon agility, and with wonderful patience and sagacity, but also with a spirit of domesticity perfectly adapted to her employment.

ployment. The cat attaches herſelf ſolely to the houſe. If the maſter removes, ſhe returns alone at night to her old habitation. She differs eſſentially in this from the dog, who attaches himſelf ſolely to the perſon of his maſter. The cat has the affection of a courtier, and the dog that of a friend; the former adheres to the poſſeſſion, and the latter to the man.

The weevil and the moth, ſometimes, commit, it is true, great depredations among our grain and our woollens. Some Writers have told us, that the common hen is ſufficient to clear the granaries of them: poſſibly it may be ſo. We have, beſides, the ſpider and the ſwallow, which deſtroy them at the ſeaſon when they take wing. I ſhall here conſider only their political utility. On looking into thoſe prodigious magazines where monopolizers hoard up the proviſion and clothing of a whole province, are we not bound to bleſs the Hand that created the inſect which obliges them to bring theſe neceſſary commodities to market? Were grain as incorruptible as gold and ſilver, it would ſoon become as ſcarce. See under how many locks and doors theſe metals are ſecured. The commonalty would, at length, be completely deprived of their ſubſiſtence, if it were as little ſuſceptible of change as that which is the repreſentative of it. The mite and the moth firſt lay the

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miſer under the neceſſity of employing a good many hands in ſtirring about and ſifting his grain, till they force him at laſt to diſpoſe of it altogether. How many poor wretches would go naked, if the moth did not devour the wardrobes and warehouſes of the rich! What is moſt wonderful here, is, that the articles which miniſter to luxury are not liable to periſh by inſects, as thoſe which are ſubſervient to the moſt preſſing wants of human life. It is poſſible to preſerve, without any diminution of value, coffee, ſilk, and cottons, even for ages; but in India, where theſe commodities are real neceſſaries of life, there are inſects which quickly corrode them, particularly cotton.

The inſects which attack the human body equally oblige the rich to employ thoſe who have nothing, as domeſtics, to keep up cleanlineſs around them. The Incas of Peru exacted even this tribute of the poor; for in all countries theſe inſects attach themſelves to Man, though it may have been ſaid, that they did not paſs the line. Beſides theſe inſects are rather teizing than noxious: they draw off the bad blood. As they immoderately increaſe only in great heats, they invite us to have recourſe to bathing, which is ſo wholeſome, and yet ſo much neglected among us, becauſe being expenſive, it is become an object of luxury.

After all, Nature has placed other inſects near us, which deſtroy them; theſe are the ſpiders *. I have heard of an old officer, who being very much incommoded with bugs, at the Hoſpital of the Invalids, permitted the ſpiders to multiply round his bed, and thereby got the better of that nauſeous vermin. This remedy, I am aware, will appear to many perſons worſe than the diſeaſe. But I believe it poſſible to find others more agreeable, in perfumes and oily eſſences; at leaſt, I have remarked, that the odour of various kinds of aro-

* I preſume that it is a particular ſpecies of ſpider: for I am perſuaded that there are as many ſpecies of theſe as there are of inſects to be deſtroyed. They do not all expand nets; ſome catch their prey fairly in the chace; others ſucceed by lying in ambuſcade. I have ſeen one in Malta of a very ſingular character, and which is to be found in every houſe of that iſland. Nature has beſtowed on this ſpecies of ſpider the reſemblance of a fly, in the head and fore part of the body. When ſhe perceives a fly on the wall, ſhe makes her firſt approaches in great haſte, taking care always to maintain the higher ſtation. When ſhe has got within five or ſix inches of her object, ſhe advances very ſlowly, preſenting to it a treacherous reſemblance; and when ſhe has got within the diſtance of two or three inches, ſhe makes a ſudden ſpring on her prey. This violent leap, made on a perpendicular plane, muſt ſurely precipitate her to the ground. No ſuch thing. You find her again ſtill on the wall, whether ſhe has made good her blow or miſſed it; for previouſly to this great effort, ſhe had affixed a cord a-top, by which to warp herſelf up again. Carteſian Philoſophers, will you pretend, after this, to perſiſt in maintaining that animals are merely machines!

 matic

matic plants puts to flight thofe abominable animals.

As to other calamities of Nature's inflicting, Man feels their preffure only becaufe he deviates from her laws. If ftorms fometimes ravage his orchards and his corn fields, it is becaufe he frequently places them where Nature never intended they fhould grow. Storms fcarcely ever injure any culture except the injudicious cultivation of Man. Forefts and natural meadows never fuffer in the flighteft degree. Befides, they have their utility. Thunder-ftorms purify and cool the air. The hail, with which they are fometimes accompanied, deftroys great quantities of hurtful infects; and hails are frequent only at the feafon when fuch infects hatch and multiply; in Spring, and Summer. But for the hurricanes of the torrid Zone, the ants and locufts would render the iflands fituated between the Tropics totally uninhabitable.

I have already pointed out the utility, the abfolute neceffity of the volcanos, whofe fires purify the waters of the Sea, as thofe of the thunder purify the air. Earthquakes proceed from the fame caufe. Befides, Nature communicates previous notice of their effects, and of the places where their focufes are fituated. The inhabitants of Lifbon know well that their city has been feveral

times

times ſhattered by ſhocks of this kind, and that it is imprudent to build in ſtone. To perſons who can ſubmit to live in a houſe of wood, they have nothing formidable. Naples and Portici are perfectly acquainted with the fate of Herculaneum. After all, earthquakes are not univerſal; they are local and periodical. Pliny has obſerved that the Gauls were not ſubject to viſitations of this kind; but there are many other countries which know of them only by report. They are ſcarcely ever felt except in the vicinity of volcanos, on the ſhores of the Sea, or of great Lakes, and only at certain particular portions of the ſhore.

As to the epidemical maladies of the Human Race, and the diſeaſes of animals, they are, in general, to be imputed to corrupted waters. Phyſicians, who have inveſtigated their cauſes, aſcribe them ſometimes to the corruption of the air, ſometimes to the mildew of plants, ſometimes to fogs: but all theſe cauſes are ſimply effects of the corruption of the waters, from which ariſe putrid exhalations that infect the air, and vegetables, and animals. This may be charged, in almoſt every inſtance, on the injudicious labours of Man. The moſt unwholeſome regions of the Earth, as far as I am at preſent able to recollect, are in Aſia, on the banks of the Ganges, from which proceed, every year, putrid fevers, that, in 1771, coſt Bengal the life

life of more than a million of men. They have for their focus the rice plantations, which are artificial moraſſes, formed along the Ganges, for the culture of that grain. After the crop is reaped, the roots and ſtalks of the plant left on the ground, rot, and are transformed into infectious puddles, from which peſtilential vapours are exhaled. It is in the view of preventing theſe pernicious conſequences, that the culture of this plant has been expreſsly prohibited in many parts of Europe, eſpecially in Ruſſia, round Otzchakof, where it was formerly produced in great quantities.

In Africa, the air of the iſland of Madagaſcar is corrupted, and from the ſame cauſe, during ſix months of the year, and will ever preſent an invincible obſtacle to any European ſettlement upon it. All the French colonies which have been planted there, periſhed one after another, from the putridity of the air; and I myſelf muſt, with the reſt, have fallen a victim to it, had not Divine Providence, by means of which I could have no foreſight, prevented my intended expedition, and reſidence in that part of the world.

It is from the ancient miry canals of Egypt, that the leproſy and the peſtilence are perpetually iſſuing forth. In Europe, the ancient ſalt-marſhes of Brouage, which the water of the Sea no longer reaches,

reaches, and in which the rain-waters ſtagnate, becauſe they are confined by the dikes and ditches of the old ſalt-pits, are become conſtant ſources of diſtemper among the cattle. Similar diſeaſes, putrid and bilious fevers, and the land-ſcurvy, annually iſſue from the canals of Holland, which putrify, in Summer, to ſuch a degree, that I have ſeen, in Amſterdam, the canals covered with dead fiſhes; and it was impoſſible to croſs certain ſtreets, without obſtructing the paſſages of the mouth and noſe with your handkerchief. They have, indeed, forced a kind of current to the ſtagnant waters by means of wind-mills, which pump them up, and throw them over the dikes, in places where the canals are lower than the level of the Sea; but theſe machines are ſtill far too few in number.

The bad air of Rome, in Summer, proceeds from it's ancient aqueducts, the waters of which are diffuſed among the ruins, or which have inundated the plains, the levels whereof have been interrupted by the magnificent labours of the ancient Romans. The purple fever, the dyſentery, the ſmall-pox, ſo common all over our plains, after the heats of Summer, or in warm and humid ſprings, proceed, for the moſt part, from the puddles of the peaſantry, in which leaves and the refuſe of plants putrify. Many of our city-diſtem-

pers issue from the laystalls which surround them, and from the cimeteries about our churches; and which penetrate into the very sanctuary.

I do not believe there would have been a single unwholesome spot on the Earth, if men had not put their hands to it. The malignity of the air of St. Domingo has been quoted, that of Martinico, of Porto-Bello, and of several districts of America, as a natural effect of Climate. But these places have been inhabited by Savages, who, from time immemorial, have busied themselves in diverting the course of rivers, and choking up rivulets. These labours constitute even an essential part of their defence. They imitate the beavers in the fortification of their villages, by inundating the adjacent country. Provident Nature, however, has placed those animals only in cold Latitudes, where, in imitation of herself, they form lakes which soften the air; and she has introduced running waters into hot Latitudes, because lakes would there speedily change, by evaporation, into putrid marshes. The lakes which she has scooped out in such Latitudes, are all situated among mountains, at the sources of rivers, and in a cool Atmosphere. I am the more induced to impute to the Savages the corruption of the air, so murderous in some of the Antilles, that all the islands which have been found uninhabited were exceed-

ingly wholeſome; ſuch as the Iſle of France, of Bourbon, of St. Helena, and others.

As the corruption of the air is a ſubject peculiarly intereſting, I ſhall venture to ſuggeſt, by the way, ſome ſimple methods of remedying it. The firſt is, to remove the cauſes of it, by ſubſtituting, in place of the ſtagnant puddles with which our plains abound, the uſe of ciſterns, the waters of which are ſo ſalubrious, when they are judiciouſly conſtructed. They are univerſally employed all over Aſia. Care ſhould, likewiſe, be taken to prevent the throwing the bodies, and other offal, of dead animals into the layſtalls of our cities; they ought to be carried to the rivers, which will be thereby rendered more productive of fiſh. In the caſe of Cities which are not waſhed by rivers to carry off the garbage, or if this method is found otherwiſe inconvenient, attention ſhould be paid, at leaſt, to placing the layſtalls only to the North and North-eaſt of ſuch cities, in order to eſcape, eſpecially during Summer, the fetid guſts which paſs over them from the South and South-weſt.

The ſecond is, to abſtain from digging canals. We are well acquainted with the maladies which have reſulted from thoſe of Egypt, in the vicinity of Rome, and elſewhere, when care is not taken to keep them in repair. Beſides, the benefits de-

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rived from them are very problematical. To look at the medals which have been ſtruck in our own country, on occaſion of the canal of Briare, would we not be induced to think that the Strait of Gibraltar was henceforth to become ſuperfluous to the navigation of France? Granting it to have been of ſome little utility to the interior commerce of the country, has the miſchief done to the plains through which it paſſes been taken into the account, as a counterbalance? So many brooks and ſprings diverted from their courſe, and collected from every quarter, to be gulped up in one great navigable canal, muſt have ceaſed to water a very conſiderable extent of land. And can that be conſidered as a great commercial benefit, which is injurious to agriculture? Canals are adapted only to marſhy places.

This is the third method of contributing to the reſtoration of the ſalubrity of the air. The attempts made in France to dry the marſhes, have always coſt us a great many men, and frequently, for that very reaſon, have been left incomplete. I can diſcover no other cauſe for this but the precipitancy with which ſuch works are undertaken, and the multiplicity of the objects which they are intended to embrace. The Engineer preſents his plan, the Undertaker gives in his eſtimate, the Miniſter approves, the Prince finds the money, the

Intendant

Intendant of the province provides the labourers; all things concur to the effect propofed, except Nature. From the bofom of rotten earth arife putrid emanations, which prefently fcatter death among the workmen.

As a remedy to thefe inconveniencies, I beg leave to throw out fome obfervations, which I believe to be well-founded. A piece of land entirely covered with water is never unwholefome. It becomes fo, only when the water which covers it evaporates, and expofes to the air the muds of it's bottom and fides. The putridity of a morafs might be remedied as effectually by transforming it into a lake, as into folid ground. It's fituation muft determine whether of thefe two objects is to be preferred. If it is in a bottom, without declivity, and without efflux, the indication of Nature ought to be followed up, and the whole covered with water. If there is not enough to form a complete inundation, it might be cut into deep ditches, and the ftuff dug out thrown on the adjoining lands. Thus we fhould have, at once, canals always full of water, and little ifles both fertile and wholefome. As to the feafon proper for fuch labours, the Spring and Autumn ought to be preferred; and great care muft be taken to place the labourers with their faces to windward, and to fupply, by means of machinery, the neceffity, to which they

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are frequently ſubjected, of plunging into mires and muds, to clear them away.

It has always appeared to me ſtrangely unaccountable, that in France, where there are ſuch numerous and ſuch judicious eſtabliſhments, we ſhould have miniſters of ſuperintendance for foreign affairs, for war, the marine, finance, commerce, manufactures, the clergy, public buildings, horſemanſhip, and ſo on, but never one for agriculture. It proceeds, I am afraid, from the contempt in which the peaſantry are there held. All men, however, are ſureties for each other; and, independently of the uniform ſtature and configuration of the Human Race, I would exact no other proof that all ſpring from one and the ſame original. It is from the puddle, by the ſide of the poor man's hovel, which has been robbed of the little brook, whoſe ſtream ſweetened it, that the epidemic plague ſhall iſſue forth to devour the lordly inhabitants of the neighbouring caſtle.

Egypt avenges herſelf, by the peſtilence ariſing out of her canals, of the oppreſſion of the Turks, who prevent her inhabitants from keeping them in repair. America, ſinking under the accumulated ſtrokes of Europeans, exhales from her boſom a thouſand maladies fatal to Europe, and drags down with her the haughty Spaniard expiring on her

her ruins. Thus the Centaur left, with Deïhira, his robe empoiſoned with the blood of the Hydra, as a preſent which ſhould prove fatal to his conqueror. Thus the miſeries which oppreſs Mankind, paſs from huts to palaces, from the Line to the Poles, from Ages paſt to Ages yet to come; and their long and lingering effects are a fearful voice crying in the ears of the Potentates of the Earth: "Learn to be juſt, and not to oppreſs the mi-"ſerable."

Not only the elements, but reaſon itſelf, corrupts in the haunts of wretchedneſs. What torrents of error, fear, ſuperſtition, diſcord, have broken out in the lower regions of Society, and ſwelled to the terror and the ſubverſion of Thrones! The more that men are oppreſſed, the more miſerable are their oppreſſors, and the more feeble is the Nation which they compoſe. For the force which tyrants employ to ſupport their authority at home, is never exerciſed but at the expence of that which they might employ, to maintain their reſpectability abroad.

Firſt, from the haunts of miſery iſſue forth proſtitutions, thefts, murders, conflagrations, highway-robberies, revolts, and a multitude of phyſical evils beſides, which, in all countries, are the plagues that tyranny produces. But thoſe of opinion are much

much more terrible. One man is bent on ſubjugating another; not ſo much for the ſake of getting hold of his property, as to command his admiration, his reverence. Ambition propoſes to itſelf no boundary ſhort of this. To whatever condition he may be elevated, and however low his rival reduced; let him have at his mercy the fortune, the labour, the wife, the perſon, of his adverſary, he has gained no point, unleſs he has gained his homage. It availed Haman nothing to have the life, the goods, of the Jews, at his diſpoſal: he muſt ſee Mordecai proſtrated at his feet. Oppreſſors are thus the oppreſſed, and become the arbiters of their own happineſs; and the oppreſſed, for the moſt part, paying them back injuſtice for injuſtice, diſturb them with falſe reports, religious terrors, dark ſurmiſes, calumnies, which engender among them, ſuſpicions, apprehenſions, jealouſies, feuds, law-ſuits, duels; and, at laſt, civil wars, which iſſue in their total deſtruction.

Let us examine, in the caſe of ſome ancient and modern Governments, this re-action of evils upon each other, and we ſhall find it's extent to be in proportion to the ills which they bring upon Mankind. On contemplating this tremendous balance, we ſhall be conſtrained to acknowledge the exiſtence of Sovereign Juſtice.

Without

Without paying regard to the common division of Governments *, into Democracy, Ariſtocracy, and Monarchy, which are only, at bottom, political

* Politicians, in claſſing Governments according to theſe exterior reſemblances in form, have acted preciſely as thoſe Botaniſts do, who comprehend in the ſame category, plants which have ſimilar flowers or leaves, without paying any attention to their virtues. The Botaniſt claſſes together the oak and the pimpernel; and the Politician the Roman Republic and that of St. Marino. This is not the way of obſerving Nature: ſhe is throughout nothing but adaptation and harmony. Her ſpirit, not her forms, is the great thing which we ought to ſtudy.

If in the Hiſtory of any People you do not attend to it's moral and internal conſtitution, which ſcarcely any Hiſtorian keeps ſteadily in view, it will be impoſſible to conceive how Republics, apparently well conſtituted, have ſuddenly ſunk into ruin: how others, on the contrary, in which nothing but agitation appeared, became formidable: whence ariſe the duration and the power of Deſpotic States, ſo much decried by modern Authors: and, finally, how it came to paſs, that, after the glorious reigns of *Marcus Aurelius* and of *Antoninus*, which have been ſo highly extolled, the Roman Empire finiſhed its progreſs to diſſolution. It was, I am bold enough to affirm, becauſe thoſe good Princes thought only of preſerving the exterior form of the Government. All was tranquillity around them; the form of a Senate remained; Rome was well ſupplied with corn; the garriſons in the provinces were regularly paid. There was no ſedition, no diſturbance, every thing to appearance went on well. But during this lethargy, the rich were going on in an unbounded accumulation of property, and the people were loſing the little that they had. The great offices of the State were engroſſed by the ſame families. In order to have the means of ſubſiſtence, it was neceſſary

political forms that determine nothing, as to either their happineſs, or their power, we ſhall inſiſt only on their moral conſtitution.

Every Government, of whatever deſcription, is internally happy, and reſpectable abroad, when it beſtows on all it's ſubjects their natural right of acquiring fortune and honours: and the contrary

ceſſary for the commonalty to attach themſelves to the Great. Rome contained a populacy of mere menials. The love of Country was extinguiſhed. The wretched did not know of what to complain. No one did them any wrong. All was orderly; but this very order precluded the poſſibility of their ever coming to any thing. They did not cut the throats of the citizens, as in the days of *Marius* and *Sylla*, but they ſtifled them.

In all human Society, there are two powers, the one temporal, and the other ſpiritual. You find them in all the Governments of the World, in Europe, in Aſia, in Africa, and in America. The Human Race is governed in the ſame way as the human body. Such is the will of the AUTHOR of Nature, in order to the preſervation and happineſs of Mankind. When Nations are oppreſſed by the ſpiritual power, they reſort for protection to the temporal; when this laſt oppreſſes, in it's turn, they have recourſe to the other. When both theſe concur to render them miſerable, then ariſe hereſies in ſwarms, ſchiſms, civil wars, and a multitude of ſecondary powers, which balance the abuſes of the two firſt, till there reſults, at length, a general apathy, and the State falls into deſtruction. We ſhall preſently go into a thorough inveſtigation of this intereſting ſubject, when we come to ſpeak of France. We ſhall find that, though there is but one which governs, of right, there are five powers which govern, in fact.

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takes place, when it reserves to a particular clafs of citizens, the benefits which ought to be common to all. It is not fufficient to prefcribe limits to the People, and to reftrain them within thefe by terrifying phantoms. They quickly force the perfon who puts them in motion, to tremble more than themfelves. When human policy locks the chain round the ancle of a flave, Divine Juftice rivets the other end round the neck of the tyrant.

Few Republics have been more judiciously conftituted than that of Lacedemon. Virtue and happinefs were feen to flourifh there, during a period of five hundred years. Notwithftanding the mediocrity of it's extent, it gave law to Greece, and to the northern coafts of Afia; but as Lycurgus had not comprehended in his plan either the Nations which Sparta was to fubdue, or even the Helots, who laboured the ground for her, by them were introduced the commotions which fhattered her conftitution, and at length totally fubverted it.

In the Roman Republic there fubfifted greater equality, and proportionally more power and happinefs. She was, indeed, divided into Patricians and Plebeians; but as thefe laft were capable of attaining the higheft military dignities, as they

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poſſeſſed, beſides, an excluſive title to the tribunitial office, the power of which equalled, nay, ſurpaſſed, that of the Conſuls, the moſt perfect harmony exiſted between the two orders. It is impoſſible to obſerve, without emotion, the deference and reſpect paid by the Plebeians to the Patricians, during the moſt glorious periods of the Republic. They ſelected their patrons from among that order; they attended them in crowds on their way to the Senate: when they happened to be poor, they aſſeſſed themſelves, to make up a marriage portion for their daughters. The Patricians, on the other hand, took an intereſt in all the affairs of the Plebeians; they pleaded their cauſes in the Senate; permitted them to bear their names; adopted them into their families, and gave them their daughters in marriage, when they diſtinguiſhed themſelves by their virtues. Theſe alliances with Plebeian families were not diſdained even by Emperors. *Auguſtus* gave his only daughter, *Julia*, in marriage to the Plebeian *Agrippa.* Virtue ſat enthroned at Rome; and no where elſe upon Earth were altars raiſed more worthy of her. A judgment of this may be formed from the rewards aſſigned to illuſtrious actions. A criminal was condemned to be ſtarved to death in priſon; his daughter is allowed permiſſion to viſit him there, and keeps him alive by the milk from her own breaſt. The Senate, informed of this inſtance

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of filial tendernefs, voted a pardon to the father, in confideration of the daughter, and on the fpot where the prifon ftood, commanded to rear a Temple facred to filial piety.

If a perfon condemned, was carrying to execution, the fentence was remitted, if a veftal happened to pafs that way. The punifhment, due to criminality, difappeared in the prefence of virtue. If, in battle, one Roman faved another out of the hands of the enemy, he became entitled to the civic crown. This crown confifted only of oak leaves, nay, it was the only military crown which had nothing golden about it, but it conferred the right of fitting, in the public theatres, on the bench adjoining to thofe which were allotted to Senators, who all ftood up in deference, on the entrance of him who wore it. It was, fays Pliny, the moft illuftrious of all crowns, and communicated higher privileges than the mural, the obfidional, and naval crowns, becaufe there is more glory in faving a fingle citizen, than in taking cities, or in gaining battles. It was the fame, for this reafon, whether the perfon faved was the commander in chief, or a private foldier; but it was not to be earned by delivering an allied King, who might have come to the affiftance of the Romans. Rome, in the diftribution of rewards, diftinguifhed only the citizen. By means of fuch patriotic fentiments,

timents, ſhe conquered the Earth; but ſhe was juſt only to her own people; it was by her injuſtice to other men, that ſhe became weak and unhappy. Her conqueſts filled her with ſlaves, who, under *Spartacus*, brought her to the brink of deſtruction, and which decided her fate at laſt by the arms of corruption, much more formidable than thoſe of war. By the vices and the flatteries of the Grecian and Aſiatic ſlaves at Rome, were formed within her boſom the *Catilines*, the *Ceſars*, the *Neros*; and while their voice was corrupting the maſters of the World, that of the Goths, the Cimbri, the Teutones, the Gauls, the Allobroges, the Vandals, the companions of their lot, was inviting their compatriots from the North and from the Eaſt, who at length levelled the glory of Rome with the duſt.

Modern Governments exhibit a ſimilar re-action of equity and felicity, of injuſtice and misfortune. In Holland, where the People may aſpire to every thing, abundance pervades the whole States, good order prevails in the cities, fidelity in wedlock, tranquility in all minds; diſputes and law-ſuits are rare in that country, becauſe every one is content. Few European Nations poſſeſs a territory ſo contracted, and no one has extended her power ſo far: her riches are immenſe: ſhe maintained ſingly ſucceſsful war againſt Spain

Spain in all it's ſplendor, and afterwards againſt France and England united: her commerce extends over the whole Globe: ſhe poſſeſſes powerful colonies in America, thriving ſettlements in Africa, formidable kingdoms in Aſia. But if we trace up to their ſource the calamities and the wars with which ſhe has been viſited for two centuries, it will be found that they proceed from the injuſtice of ſome of her ſettlements in thoſe countries. Her happineſs and her power are not to be attributed to her republican form of Government, but to that community of benefits, which ſhe preſents indiſcriminately to all her ſubjects, and which produces the ſame effects in deſpotic Governments, of which we have had repreſentations ſo frightful.

Among the Turks, as among the Dutch, there is no ſuch thing as quarrelling, or calumniating, or ſtealing, or proſtitution, in the cities. Nay, there is not to be found, perhaps, over the whole Empire, a ſingle Turkiſh woman carrying on the trade of a courtezan. There is, in the general mind, neither reſtleſſneſs nor jealouſy. Every man ſees, without envy, in his ſuperiors, a felicity attainable by himſelf, and he is at all times ready to lay down his life for the Religion and Government of his Country. Their force abroad is by no means inferior to the perfection of their union at home. With whatever contempt our Hiſtorians may

may expoſe their ignorance and ſtupidity, they have actually made themſelves maſters of the fineſt provinces of Aſia, of Africa, of Europe, nay, of the Empire of the Greeks themſelves, with all their wit and learning, becauſe the ſentiment of patriotiſm which unites them, is ſufficient to baffle all the talents and all the tactics in the world. They have undergone, however, frequent convulſions from the revolting of the conquered Nations; but the moſt dangerous proceed from their feebleſt adverſaries, from thoſe very Greeks, whoſe property they plunder with impunity, and whoſe children they annually carry off, as a tribute to recruit the Seraglio. From theſe ſame children iſſue, by a re-acting Providence, moſt of the Janizaries, the Agas, the Pachas, the Baſhaws, the Viziers, which oppreſs the Turks, in their turn, and render themſelves formidable even to their Sultans.

It is this ſame community of hopes and of fortunes preſented, without diſtinction, to all conditions of men, which has given ſo much energy to Pruſſia, whoſe internal police, and victories abroad, have been ſo highly celebrated by our political Writers; though it's Government is ſtill more deſpotic than that of Turkey; for the Prince there is abſolute maſter at once in temporals and in ſpirituals.

The Republic of Venice, on the contrary, ſo well known for her courtezans, for the reſtleſſneſs and jealouſy of her Government, is extremely feeble externally, though ſhe is of higher antiquity, in a ſituation more advantageous, and under a much finer ſky than Holland. Venice is a maritime power in the Mediterranean, hardly acknowledged as ſuch in modern times, whereas Holland is enlivening the whole Earth by her commerce; becauſe the firſt has reſtricted the rights of humanity to the claſs of Nobility, and the ſecond has extended them to the whole people.

It is, farther, from the influence of this unjuſt partition, that Malta, with the fineſt port in the Mediterranean, ſituated between Africa and Europe, in the vicinity of Aſia, and ſwarming with a young Nobility of undaunted courage, will ever remain the laſt Power in Europe, becauſe the People there are reduced to nothing.

I ſhall here take occaſion to obſerve, that hereditary nobility in a State deſtroys, at once, all emulation in both the nobly and ignobly born. It is deſtroyed in the firſt, becauſe, being entitled by birth to pretend to every thing, they have no need to call in the aſſiſtance of merit; and in the ſecond, being excluded from every pretenſion to riſe, no degree of merit could avail them. This

is the political vice which has undermined the power of Portugal, and that of Spain; and not the monaſtic ſpirit, as ſo many Writers have aſſerted. The monkiſh order was all-powerful from the times of *Ferdinand* and *Iſabella*. It was a Monk who decided at Court, the expedition of *Chriſtopher Columbus* in queſt of a new World, the conqueſt of which quadrupled in Spain the number of Gentlemen. Not a Spaniſh ſoldier went over to America, but gave himſelf out, on his arrival there, for a man of family, and who, on his return to Spain, with money in his pocket, did not make good his title. The ſame thing ſhewed itſelf among the Portugueze, who made conqueſts in Aſia. The military order, in both theſe Nations, at that time performed prodigies, becauſe the career of ambition, in feats of arms, was then open to the commonalty. But ever ſince it has been ſhut againſt them, by the prodigious number of gentlemen with which theſe two States abound, the balance has turned in favour of the monaſtic order, and conferred upon it a tribunitial Power.

However wonderful our political ſpeculations may repreſent the threefold counterbalancing powers which conſtitute the Government of Great Britain, it is to the violent agitations of thoſe powers we muſt aſcribe the perpetual quarrels which diſturb her happineſs, and the venality which

which has, at length, corrupted her. The Commons, I grant, form one of her Houſes of Parliament, but the right of ſitting in it as a repreſentative, being reſtricted to perſons poſſeſſed of ſuch a revenue, it's doors muſt, of courſe, be ſhut againſt the admiſſion of many a wiſe head, and be open to ſome not entirely of that deſcription. An *Alcibiades* and a *Cataline* might have made a ſhining figure there; but a *Socrates*, the juſt *Ariſtides*, *Epaminondas*, who transferred the Empire of Greece to Thebes, *Attilius-Regulus*, who was called from the plough to the Dictatorſhip, *Menenius-Agrippa*, who ſettled the diſpute between the Senate and People; no one of theſe could have procured a ſeat, becauſe he had not an eſtate in land worth ſo much a year. Britain would deſtroy herſelf by her very boaſted Conſtitution, did ſhe not preſent a common career to every citizen, in her Marine. All the Orders of the State concur in this point of union, and give it ſuch a preponderancy, that it fixes their political equilibrium. Whoever could deſtroy the Marine of England, would annihilate her Government. This unanimous concurrence of the whole Nation toward the cultivation of one ſingle Art, has raiſed it to a height of perfection hitherto unattained in any other Country, and has rendered it the ſole inſtrument of her power.

If we glance a look on the other States which bear the name of Republic, we ſhall find internal diſorder, and external weakneſs, increaſing in proportion to the inequality of the citizens. Poland has reſerved to the Nobility excluſively, all the authority, and left her Commonalty in the moſt deteſtable ſlavery; ſo that war, which eſtabliſhes between the citizens of one and the ſame Nation, a community of danger, eſtabliſhes, between thoſe of Poland, no community of reward. Her Hiſtory exhibits nothing but a long ſeries of bloody quarrels between Palatinate and Palatinate, City and City, Family and Family, which have always rendered her extremely miſerable. The greateſt part of the Nobility themſelves are there reduced to ſuch wretchedneſs, that they are obliged, for a ſubſiſtence, to ſerve the Grandees in the moſt contemptible employments, as our own Nobility formerly did under the feudal Government, and as is the caſe to this day in Japan: for wherever the peaſantry are ſlaves, the yeomanry are menials. The calamity has, at length, overtaken Poland, in our own days, which would have fallen upon her long ago, had not the Kingdoms which ſurround her laboured then under the ſame defects in their ſeveral Conſtitutions. She has been parcelled out by her neighbours, in deſpight of her long political diſcuſſions, as the Empire of the Greeks was

by

by the Turks, at a time when certain priests, who had got possession of the public mind, were amusing them with theological subtilities.

In Japan, the wretchedness of the Nobles is in proportion to their tyranny. They formed at first a feudal Government, which it is so easy to subvert, as well as all those of the same nature; for the first of the feudal Chiefs who aspired at the sovereignty, effected his purpose by a single battle. He curtailed their power of determining their quarrels by civil wars, but left them in full possession of all their other privileges; that of abusing the peasants, who there are mere slaves, the power of life and death over all who are in their pay, even over their wives. The mass of the people, who, in extreme misery, have no way of subsisting, but by intimidating or corrupting their tyrants, have produced, in Japan, an incredible multitude of bonzes, of all sects, who have erected temples on every mountain; comedians and drolls, who have theatres set up at every cross-street of their cities; and courtezans in such shoals, that the traveller is pestered with them on every high road, and at every inn where he stops. But this very people set such a high value on the consideration, exacted of them by the Nobility, that if so much as a cross look passes between two of them, fight they must; and if the insult be any thing serious,

ſerious, it is abſolutely neceſſary that both parties ſhould rip up each other, under pain of infamy. To this hatred of it's tyrants we muſt impute the ſingular attachment which the Japaneſe expreſſed for the Chriſtian Religion, becauſe they hoped it was to efface, by it's morality, diſtinctions ſo abominable between man and man: and to popular prejudices we muſt refer, in the Nobility of that Country, the contempt which they expreſſed on a thouſand occaſions, for a life rendered ſo precarious from the opinion of another.

A ſage equality, proportioned to the intelligence, and to the talents of all her ſubjects, has, for a long time, rendered China the happieſt ſpot on the Globe: but a taſte for pleaſure having there, at laſt, produced a diſſolution of the moral principle, money, the inſtrument of procuring it, is become the moving principle of the Government. Venality has there divided the Nation into two great claſſes, the rich and the poor. The ancient ranks which, in that Country, elevated men to all the public offices, ſtill exiſt, but the rich only actually fill them. This vaſt and populous Empire having no longer any patriotiſm, but what conſiſts in certain unmeaning ceremonies, has been, oftener than once, invaded by the Tartars, who were invited into the Country by the calamities which the People endured.

The

The Negros, in general, are conſidered as the moſt unfortunate ſpecies of Mankind on the face of the Globe. In truth, it looks as if ſome deſtiny had doomed them to ſlavery. The ancient curſe pronounced by *Noah* *, is by ſome believed to be ſtill actually in effect: " Curſed be Canaan! a " ſervant of ſervants ſhall he be unto his bre- " thren." They themſelves confirm it by their traditions. If we may give credit to a Dutch Author, of the name of *Boſman*, " the Negros of the " Guinea coaſt allege, that GOD, having created " blacks and whites, propoſed to them the power " of chooſing between two things, namely, the " poſſeſſion of gold, and of the art of reading and " writing; and as GOD gave the power of the " firſt choice to the blacks, they preferred gold; " and they left learning to the whites, which was " accordingly granted them. But that the CREA- " TOR, provoked at the appetite for gold which " they had manifeſted, immediately paſſed a de- " cree, that the whites ſhould have eternal domi- " nion over them, and that they ſhould for ever " be ſubject to their white brethren as ſlaves †". I do

* Geneſis, chap. ix. ver. 25.

† *Boſman's Voyage to Guinea*, letter x. This deciſion of modern Negros is highly to their honour. They ſeem to feel the ineſtimable value of knowledge. But could they have ſeen, in Europe, the condition of moſt men of literature, compared with that

I do not mean to ſupport, by Sacred Authority, nor by that which theſe unfortunate wretches themſelves furniſh, the tyranny which we exerciſe over

that of men who poſſeſs gold, their tradition would have been completely reverſed.

Similar opinions may be traced through other African black tribes, particularly among the blacks of the Cape de Verd Iſlands, as may be ſeen in the excellent account given of them by *George Robert*. This unfortunate Navigator was obliged to flee for refuge to the Iſland of St. John, where he received from the inhabitants the moſt affecting proofs of generoſity and hoſpitality, after having undergone the moſt atrociouſly cruel treatment from his countrymen, the Engliſh pirates, who plundered his veſſel.

It muſt, however, be acknowledged, that if ſome African tribes excel us in moral qualities, the Negros, in general, are very inferior to other Nations in thoſe of the underſtanding. They have never to this day diſcovered the addreſs of managing the elephant as the Aſiatics have done. They have carried no one ſpecies of cultivation to it's higheſt degree of perfection. They are indebted for that of the greateſt part of their alimentary vegetables to the Portugueze, and to the Arabians. They practiſe no one of the liberal Arts, which had made, however, ſome progreſs among the inhabitants of the New World, who are much more modern than they. Nature has placed them on a part of the Continent, from whence they might with eaſe have penetrated into America, as the winds which blow thither are eaſterly, that is, perfectly fair; but ſo far from that, they had not even diſcovered the iſlands in their vicinity, ſuch as the Canaries and the Cape de Verds. The black Powers of Africa have never to this hour diſcovered genius equal to the conſtruction of a brigantine. So far from attempting to extend their

over them. If the malediction of a Father has been able to extend ſuch an influence over his poſterity, the benediction of GOD, which, under the Chriſtian Religion, extends to them as well as to us, re-eſtabliſhes them in all the liberty of the law of Nature. The precept of Chriſtianity

their boundaries, they have permitted ſtrangers to take poſſeſſion of all their coaſts. For in ancient times, the Egyptians and Phenicians ſettled on their eaſtern and northern ſhores, which are now in poſſeſſion of the Turks and Arabians. And for ſome ages paſt, the Portugueze, the Engliſh, the Danes, the Dutch, and the French, have laid hold of what remained to the Eaſt, and to the South, and to the Weſt, ſimply for the purpoſe of getting ſlaves.

It muſt needs be, after all, that a particular Providence ſhould have preſerved the patrimony of theſe children of Canaan, from the avidity of their brethren, the children of Shem and Japhet; for it is aſtoniſhing, that perſons ſuch as we are, the ſons of Japhet in particular, who, as being younger brothers, were hunting after fortune all the world over, and who, according to the benediction of Noah, our Father, were to extend our lodging even into the tents of Shem, our elder brother, ſhould never have eſtabliſhed colonies, in a part of the world ſo beautiful as Africa is, ſo near us, in which the ſugar-cane, the coffee plant, and moſt of the productions of Aſia and America can grow, and, in a word, where ſlaves are the produce of the ſoil.

Politicians may aſcribe the different characters of Negros and Europeans to whatever cauſes they pleaſe. For my own part, I ſay it on the moſt perfect conviction, that I know no book, which contains monuments more authentic of the Hiſtory of Nations, and of that of Nature, than the Book of Geneſis.

which enjoins us to consider all men as brethren, speaks in their behalf, as in behalf of our own countrymen. If this were the proper place, I could demonstrate how Providence enforces, in their favour, the laws of universal justice, by rendering their tyrants, in our colonies, a hundred times more wretched than they are. Besides, how many wars have been kindled among the maritime Powers of Europe, on account of the African slave-trade? How many maladies, and corruptions of blood in families, have not the Negros produced among us?

But I shall confine myself to their condition in their own country, and to that of their compatriots who abuse their power over them. I do not know that there ever existed among them a single Republic, except it were, perhaps, some pitiful Aristocracy along the western coast of Africa, such as that of Fantim. They are under the dominion of a multitude of petty tyrants, who sell them at pleasure. But, on the other hand, the condition of those kings is rendered so deplorable by priests, fetichas, grigris, sudden revolutions, nay, the very want of the common necessaries of life, that few of our common sailors would be disposed to change states with them. Besides, the Negros escape a considerable proportion of their miseries, by the thoughtlessness of their temper, and the levity of their

their imagination. They dance in the midst of famine, as of abundance; in chains, as when at liberty. If a chicken's foot inspires them with terror, a small slip of white paper restores their courage. Every day they make up, and pull to pieces their gods, as the whim strikes them.

It is not in stupid Africa, but in India, the ancient wisdom of which stands in such high reputation, that the miseries of the Human Race are carried to their highest excess. The Bramins, formerly called Brachmans, who are the priests there, have divided the Nation into a variety of Casts, some of which they have devoted to infamy, as that of the Parias. No one will doubt that they have taken care to render their own sacred. No person is worthy to touch them, to eat with them, much less to contract any manner of alliance. They have contrived to prop up this imaginary grandeur by incredible superstitions. From their hands have issued that infinite number of Gods, of monstrous forms, which scare the human imagination all over Asia. The Commonalty, by a natural reaction of opinions, render them, in their turn, the most miserable of all mankind. They are obliged, in order to support their reputation, to wash themselves from head to foot, on the slightest contamination by contact; to undergo frequent and rigorous fastings; to submit to penances the most

 horrible,

horrible, before idols which they themſelves have rendered ſo tremendous: and as the people are not permitted to intermix blood with them, they conſtrain, by the power of prejudice over the tyrants, their widows to burn themſelves alive, with the body of the dead huſband.

Is it not, then, a very horrible condition, for men reputed wiſe, and who give law to their Nation, to be witneſſes of the untimely death, in circumſtances ſo ſhocking, of their female friends and relations, of their daughters, their ſiſters, their mothers? Travellers have cried up their knowledge: but is it not an odious alternative for enlightened men, either to terrify perpetually the ignorant, by opinions which, at the long-run, ſubjugate even thoſe who propagate them; or, if they are ſo fortunate as to preſerve their reaſon, to make a ſhameful and criminal uſe of it, by employing it to diſſeminate falſhood? How is it poſſible for them to eſteem each other? How is it poſſible to retire within themſelves, and to lift up their eyes to that Divinity, of whom, as we are told, they entertain conceptions ſo ſublime, and of whom they exhibit to the People repreſentations ſo abominable?

Whatever may be, as far as their ambition is concerned, the melancholy fruit of their policy, it has drawn in it's train the miſery of this vaſt

Empire,

Empire, ſituated in the fineſt region of the Globe. Their military is formed of the Nobility, called Naïrs, who poſſeſs the ſecond rank in the State. The Bramins, in order to ſupport themſelves by force, as well as by guile, have admitted them to a participation in ſome of their privileges. Hear what *Walter Schouten* ſays, of the indifference expreſſed by the common People toward the Naïrs, when any miſchief befals them. After a bloody encounter, in which the Dutch killed a conſiderable number of thoſe who had taken the ſide of the Portugueze: "No outrage or inſult," ſays he *, "was offered to any artiſan, peaſant, fiſher-"man, or other inhabitant of Malabar, not even "in the rage of battle. They, in conſequence, "never thought of flight. A great many of them "were poſted at different places, merely as ſpec-"tators of the action; and they appeared to take "no manner of intereſt in the fate of the Naïrs."

I have been an eye-witneſs of the ſame apathy in Nations, whoſe Nobility forms a ſeparate claſs, among others, in Poland. The Commonalty of India ſubject the Naïrs, as well as the Bramins, to their ſhare of the miſeries of opinion. The Naïrs are incapacitated to contract legitimate marriages. Many of them, known by the name of Amocas,

* Voyage to the Eaſt-Indies, vol. i. page 367.

 are

are obliged to ſacrifice themſelves in battle, or on the death of their kings. They are the victims of their unjuſt honour, as the Bramins are of their inhuman religion. Their courage, which is merely profeſſional ſpirit, far from being beneficial to their Country, is frequently fatal to it. From time immemorial, it has been deſolated by their inteſtine wars; and it is ſo feeble externally, that handfuls of Europeans have made ſettlements in it, whereever they pleaſed. At the cloſe of the war in 1762, a propoſition was made in the Parliament of Great Britain, to make the complete conqueſt of it, and to pay off the national debt, with the riches which might have been extracted out of it; and this the Propoſer undertook to effect, if he was landed in India with an army of five thouſand Europeans. The boldneſs of the enterprize aſtoniſhed no one of his compatriots, who were acquainted with the weakneſs of that Country, and it was laid aſide, as is alleged, merely from the injuſtice of it.

In France, the People never acquire any ſhare in the Government, from *Julius Ceſar*, who is the firſt Writer that has made this obſervation, and who is not the laſt politician that has availed himſelf of it, to render himſelf eaſily it's maſter, down to Cardinal *Richlieu*, who levelled the feudal power. During this long interval, our Hiſtory preſents nothing but a ſeries of diſſentions, of civil

wars,

wars, of diſſolute manners, of aſſaſſinations, of Gothic laws, of barbarous cuſtoms; and furniſhes nothing intereſting to the Reader; let the Preſident *Henault*, who compares it to the Roman Hiſtory, ſay what he will. It is not merely becauſe the fictions of the Romans are more ingenious than ours; it is becauſe we do not find in our Hiſtory, that of a People, but only the hiſtory of ſome great family.

From this, however, muſt be excepted the Lives of ſome good Kings, ſuch as thoſe of St. *Louis*, of *Charles* V. of *Henry* IV; and of ſome good Men, who are intereſting to us, for this very reaſon, that they intereſted themſelves in behalf of the Nation. In every other caſe, it is impoſſible to diſcover about what the Government was employing itſelf: it ſtudied the intereſt only of the Nobility. The Country was ſubjugated ſucceſſively by the Romans, the Francs, the Goths, the Alains, the Normans. The facility with which France embraced Chriſtianity, is a proof that ſhe ſought, in religion, a refuge from the miſeries of ſlavery. To this ſentiment of confidence the Clergy is indebted for the firſt rank which it obtained in the State. But the Clergy ſoon degenerated from it's firſt ſpirit; and ſo far from meditating the deſtruction of tyranny, enliſted under the banner of tyrants; adopted all their cuſtoms; aſſumed

aſſumed their titles; appropriated to itſelf their rights and their revenues; and even made uſe of their arms to maintain intereſts which were in ſuch direct oppoſition to it's morality. A great many churches had their knights and their champions, who ſupported their claims in ſingle combat.

It would be unfair to impute to religion, the miſchief occaſioned by the avarice and the ambition of her miniſters. She herſelf aſſiſts us in detecting their faults, and enjoins us to be on our guard againſt them. The greateſt Saints, St. Jerom * among others, have expoſed and condemned the vices of the clergy, with more vehemence than ever modern Philoſophers have done. Much has been written of late to diſcredit religion, with a view to diminiſh the power of prieſts. But, univerſally, wherever ſhe has fallen, their power has increaſed. Religion herſelf alone reſtrains them within due bounds. Obſerve in the Archipelago, and elſewhere, how many fraudulent and lucrative ſuperſtitions have been ſubſtituted by the Greek *Papas* and *Caloyers*, in place of the ſpirit of the Goſpel! Beſides, whatever reproach may be caſt upon our own clergy, they have their anſwer ready, namely, that they have been, in all ages, like the reſt of their compatriots, the children of

* Conſult his Letters.

this

this world. The Nobles, Magiſtrates, Soldiers, nay, the Kings themſelves, of former times, were no better than they.

They have been accuſed of promoting every where the ſpirit of intolerance, and of aiming at ſuperiority, by preaching up humility. But moſt of them, repelled by the world, carry into their profeſſional corps, that ſpirit of intolerance of which the world ſet the example, and of which they are the victims; and their ambition, frequently, is a mere conſequence of that univerſal ambition, with which national education, and the prejudices of ſociety, inſpire all the members of the State.

Without meaning to make their apology, and much leſs ſatirically to inveigh againſt them, or any body of men whatever, whoſe evils it was not my wiſh to diſcover, except for the purpoſe of indicating the remedies which ſeem to me to be within their reach, I ſhall here confine myſelf to a few reflections on religion, which is, even in this life, the avenger of the wicked, and the conſolation of the good.

The world, in theſe days, conſiders religion as the concern only of the vulgar, and as a mere po-

litical contrivance to keep them in order. Our Philosophers, state in opposition to it, the philosophy of *Socrates*, of *Epictetus*, of *Marcus-Aurelius*; as if the morality of those sages were less austere than that of JESUS CHRIST; and as if the benefits to be expected from it were better secured than those of the Gospel! What profound knowledge of the heart of man; what wonderful adaptation to his necessities; what delicate touches of sensibility, are treasured up in that divine Book! I leave it's mysteries out of the question. Part of them, we are told, have been taken from *Plato*. But *Plato* himself borrowed them from Egypt, into which he had travelled; and the Egyptians were indebted for them, as we are, to the Patriarchs. These mysteries, after all, are not more incomprehensible than those of Nature, and than that of our own existence. Besides, in our examination of them, we inadvertently mislead ourselves. We want to penetrate to their source, and we are capable only of perceiving their effects. Every supernatural cause is equally impenetrable to man. Man himself is only an effect, only a result, only a combination for a moment. He is incapable of judging of divine things according to their nature; his judgment of them must be formed according to his own nature, and from the correspondence which they have to his necessities.

If we make uſe of theſe teſtimonies of our weakneſs, and of theſe indications of our heart, in the ſtudy of religion, we ſhall find that there is nothing that can pretend to that name, on the face of the Earth, ſo perfectly adapted to the wants of human nature, as the religion of the Bible. I ſay nothing of the antiquity of it's traditions. The Poets of moſt Nations, Ovid among the reſt, have ſung the Creation, the happineſs of the Golden Age, the indiſcreet curioſity of the firſt woman, the miſeries which iſſued from *Pandora*'s Box, and the Univerſal Deluge, as if they had copied theſe Hiſtories from the Book of Geneſis.

To the Moſaic account of the Creation, and the recent exiſtence of the World, have been objected the antiquity and the multiplicity of certain lavas in volcanos. But have theſe obſervations been accurately made? Volcanos muſt have emitted their fiery currents more frequently in the earlier ages, when the Earth was more covered with foreſts, and when the Ocean, loaded with it's vegetable ſpoils, ſupplied more abundant matter to their furnaces. Beſides, as I have ſaid in the courſe of this Work, it is impoſſible for us to diſtinguiſh between what is old and what is modern in the ſtructure of the World. The hand of Creation muſt have manifeſted the impreſs of ages upon it, from the moment of it's birth. Were we to ſuppoſe it eternal, and

and abandoned to the laws of motion fimply, the period muft be long paft, when there could not have been the fmalleft rifing on it's furface. The action of the rains, of the winds, and of gravity, would have brought down every particle of Land to the level of the Seas.

It is not in the works of GOD, but in thofe of men, that we are enabled to trace epochs. All our monuments announce the late Creation of the Earth which we inhabit. If it were, I will not fay eternal, but of high antiquity only, we fhould, furely, find fome productions of human induftry much older than from three to four thoufand years, fuch as all thofe that we are acquainted with. We have certain fubftances on which time makes no very perceptible alteration. I have feen, in the poffeffion of the intelligent Count *de Caylus*, con-ftellation rings of gold, or Egyptian talifmans, as entire as if they had juft come from the hand of the workman. Savages, who have no knowledge of iron, are acquainted with gold, and fearch after it, as much for it's durability as for it's fhining colour. Inftead, then, of finding antiques of only three or four thoufand years, fuch as thofe of the moft ancient Nations, we ought to poffefs fome of fixty, of a hundred, of two hundred thoufand years.

Lucretius

Lucretius, who aſcribes the Creation of the World to atoms, on a ſyſtem of Phyſics altogether unintelligible, admits that it is quite a recent production.

> Præterea, ſi nulla fuit genitalis origo
> Terraï & cœli, ſemperque eterna fuere,
> Cur ſupra bellum Thebanum, & funera Trojæ,
> Non alias alii quoque res cecinêre Poetæ.
>
> *De rerum Naturâ, Lib. v. ver.* 325 *.

"Had Heaven and Earth known no beginning of "exiſtence, but endured from eternity, why have "we no Poets tranſmitting to us the knowledge "of great events, prior to the Theban war, and "the downfall of Troy?"

The Earth is filled with the religious traditions of our Scriptures: they ſerve as a foundation to the religion of the Turks, the Perſians, and the Arabians: they extend over the greateſt part of Africa: we find them again in India, from whence all Nations and all Arts originally proceeded: We can trace them in the ancient and intricate

* Thus imitated:

> If genial Nature gave the Heavens no birth,
> And from eternal ages roll'd the Earth,
> Why neither wars nor Poets—Sages, tell,
> Till *Homer* ſung, how mighty *Hector* fell?

religion

religion of the Bramins *; in the Hiſtory of Brama, or Abraham; of his wife Saraï, or Sara; in the incarnations of Wiſtnou, or of Chriſtnou; in a word, they are diffuſed even among the ſavage tribes which traverſe America.

I ſay nothing of the monuments of our religion, as univerſally diffuſed as her traditions, one of which, inexplicable on the principles of our Phyſics, proves a general Deluge, by the wrecks of marine bodies ſcattered over the ſurface of the Globe; the other, irreconcileable to the laws of our Politics, atteſts the reprobation of the Jews, diſperſed over all regions, hated, deſpiſed, perſecuted, without Government, without a Country; nevertheleſs, always numerous, always ſubſiſting, and always tenacious of their Law. To no purpoſe have attempts been made to trace reſemblances between their condition, and that of ſeveral other Nations, as the Armenians, the Guebres, and the Banians. But theſe laſt-mentioned Nations hardly emigrate beyond the confines of Aſia: their numbers are extremely inconſiderable: they are neither hated nor perſecuted by other Nations; they have a Country; and, finally, they have not adhered to the religion of their anceſtors. Certain

* See *Abraham Rogers*, his Hiſtory of the *Manners of the Bramins.*

tain illuſtrious Authors have ſtated theſe ſupernatural proofs of a Divine Juſtice, in a very ſtriking light: I ſhall ſatisfy myſelf with adducing a few more, ſtill more affecting, from their correſpondence to Nature, and to the neceſſities of Mankind.

The morality of the Goſpel has been challenged, becauſe JESUS CHRIST, in the country of the Gadarenes, permitted a legion of demons to take poſſeſſion of a herd of two thouſand ſwine, which were thereby precipitated into the Sea, and choked. "Why," aſk the objectors, "ruin the proprietors of thoſe animals?" JESUS CHRIST acted in this as a Legiſlator. The perſons to whom the ſwine belonged were Jews; they tranſgreſſed, therefore, the Law which declares thoſe animals unclean. But here again ſtarts up a new objection, levelled at Moſes. "Why are thoſe animals pronounced unclean?" Becauſe, in the Climate of Judea, they are ſubject to the loproſy. But here is a freſh triumph for our Wits. "The Law of Moſes," ſay they," was, then, relative to Climate; it could be at moſt, of conſequence, a mere political conſtitution." To this I anſwer, that if I found in either the Old Teſtament, or the New, any uſage whatever which was not relative to the Laws of Nature, I ſhould be ſtill more aſtoniſhed. It is the character of a Religion divinely

vinely inſpired, to be perfectly adapted to the happineſs of Man, and to Laws antecedently enacted by the AUTHOR of Nature. From this want of correſpondence, all falſe religions may be detected. And as to the point in queſtion, the Law of Moſes, from it's privations, was evidently intended to be the Law of a particular People; whereas that of the Goſpel, from it's univerſality, muſt have been intended for the whole Human Race.

Paganiſm, Judaiſm, Mahometaniſm, have all prohibited the uſe of certain ſpecies of animal food; ſo that if one of thoſe religions ſhould become univerſal, it would produce either total deſtruction, or unbounded multiplication; each of which evidently would violate the plan of the Creation. The Jews and Turks proſcribe pork; the Indians of the Ganges reverence the heifer and the peacock. There is not an animal exiſting which would not ſerve as a Feticha to ſome Negro, or as a Manitou to ſome Savage. The Chriſtian Religion alone permits the neceſſary uſe of all animals; and preſcribes abſtinence from thoſe of the Land, only at the ſeaſon when they are procreating, and when thoſe of the Sea abound on the ſhores, early in the Spring *.

* Is it poſſible to abſtain from ſmiling? No, the prejudices of education, in a good man, excite a ſerious emotion, in a benevolent

All religions have filled their temples with carnage, and immolated to DEITY the life of the

nevolent mind. Brought up in the habit of abſtinence from animal food, during the ſeaſon of Lent, good M. *de Saint-Pierre* takes it for granted, that this is an inſtitution of Chriſtianity, and endeavours ingeniouſly to reconcile it to a law of Nature. But the truth is, the Goſpel contains no ſuch injunction; and the univerſality of that religion is ſtill greater than even the enlarged mind of our Author apprehended, in one reſpect at leaſt. How can it be imagined, that JESUS CHRIST, in faſting ſo long in the Wilderneſs, intended to ſet the example, of an annual abſtinence of the ſame duration, to his diſciples? What Jew ever thought of making *Moſes* a pattern in this ſame reſpect? But while I regret the power of prejudice in another, let me take care that my own be overcome; or if any remain, that they be harmleſs, or rather on the ſide of virtue.

In the very next paragraph, our Author is betrayed into a ſimilar miſtake, reſpecting the nature and deſign of the Sacrament of the Lord's Supper, by the phraſe in uſe, in that Church whoſe communion he had, from education, adopted. That ordinance is, in Roman Catholic countries, denominated the *ſacrifice* of the maſs. Carried away by the word *ſacrifice*, M. *de Saint-Pierre* is led to repreſent the Chriſtian Worſhipper as preſenting to GOD, in the Sacrament, *an offering* of bread, and wine. But it is not ſo. He is commanded to *take and eat*, to *take and drink*, in remembrance of CHRIST. The ſacrifice which Chriſtianity demands, and which every ſincere communicant preſents to GOD, is the *living ſacrifice* of himſelf, which St. Pauls calls our *reaſonable ſervice*. We meet, however, with a beautiful train of thought, in what follows, reſpecting the elementary part of the inſtitution, ſtrongly characteriſtic of a pious, penetrating, and comprehenſive mind; and which the devout Proteſtant may peruſe to advantage. H. H.

brute

brute creation. The Bramins themſelves, ſo full of compaſſion to the beaſts, preſent to their idols the blood and life of men. The Turks offer in ſacrifice camels and ſheep. Our Religion, more pure, if we attend merely to the matter of the ſacrifice, preſents in homage to GOD bread and wine, which are the moſt delicious gifts which He has beſtowed on Man. Nay, here we muſt obſerve, that the vine, which grows, from the Line up to the fifty-ſecond degree of North Latitude, and from England to Japan, is the moſt widely diffuſed of all fruit-trees; that corn is almoſt the only one of alimentary plants which thrives in all Climates; and that the liquor of the one, and the flour of the other, is capable of being preſerved for ages, and of being tranſported to every corner of the Earth.

All religions have permitted to men, a plurality of women in marriage: Chriſtianity permitted but one, long before our Politicians had obſerved that the two ſexes are born in nearly equal numbers. All have boaſted of their genealogies; and, regarding with contempt moſt other Nations, have permitted their votaries, when they had it in their power, to reduce them to a ſtate of ſlavery. Ours alone has protected the liberty of all men, and has called them back to one and the ſame deſtination, as to one and the ſame origin. The religion of the

the Indians promifes pleafure in this world; that of the Jews, riches; that of the Turks, conqueft: ours enjoins the practice of virtue, and promifes the reward of it in Heaven. Chriftianity alone knew that our unbounded paffions were of divine original. It has not limited love, in the heart of Man, to wife and children, but extends it to all Mankind: it circumfcribes not ambition to the fphere of a party, to the glory of one Nation, but has directed it to Heaven and Immortality: Our Religion intended that our paffions fhould minifter as wings to our virtues *. So far from uniting us on

* Religion alone gives a fublime character to our paffions. It diffufes charms ineffable over innocence, and communicates a divine majefty to grief. Of this I beg leave to quote two inftances. The one is extracted from an account, not in very high eftimation, of the Ifland of St. Erini, (chap. xii.) by Father *Francis Richard*, a jefuit-miffionary; but which contains fome things that pleafe me from their native fimplicity. Of the other I was an eye-witnefs.

" After dinner," fays Father *Richard*, " I retired to St. " George's, which is the principal Church of the Ifland of " Stamphalia. There one of the *Papas* prefented to me a book " of the Gofpels, in order to difcover if I could read their lan- " guage as well as I fpake it. Another came and afked me, " whether our holy father the Pope were a married man. But " I was ftill more amufed by the queftion of an old woman, " who, after looking fteadily at me for a confiderable time, be- " fought me to tell her if I really believed in GOD and in the " Holy Trinity. Yes, faid I, and to give her full affurance of " it,

on Earth, to render us miſerable, it is ſhe who burſts aſunder the chains by which we are held captive. How many calamities has ſhe ſoothed! how

" it, I made the ſign of the croſs. O! how glad I am, ſays " ſhe, that you are a Chriſtian! We had ſome doubt of it. On " this I pulled from my boſom the croſs which I wore: The " woman, quite tranſported with joy, exclaimed, Why ſhould " we any longer call in queſtion his being a good Catholic, " ſeeing he worſhips the croſs! After her, another ap- " plied to me, of whom I aſked, whether ſhe had a mind to " confeſs. How! replied ſhe, would it not be a ſin to confeſs " to ſuch gentlemen as you? No, ſaid I, for though I am " French, I confeſs in Greek. I will go, replied ſhe, and aſk " our Biſhop. In a little while ſhe returned, perfectly de- " lighted at having obtained his permiſſion. After confeſſion, " I gave her an *Agnus Dei*, which ſhe went about and ſhewed " to every one, as a curioſity which they had never ſeen before. " I was preſently beſet by a multitude of women and children, " who preſſed me to give them ſome. I anſwered, that thoſe " *Agnuſes* were given only to ſuch as had confeſſed. In or- " der to gain their point, they inſtantly offered to confeſs, " and wanted to do ſo by pairs; that is to ſay, a young girl " with her female confident, a young man with his boſom- " friend, whom they denominate ἀδελφοπείθον, *Adelphopeithon*, " confidential brother, alleging as a reaſon, that they had but " one heart; and that, therefore, there ought to be nothing ſe- " cret between them. It was with difficulty I could ſeparate " them; however they were under the neceſſity of ſubmit- " ting."

Some years ago, I happened to be at Dieppe, about the time of the autumnal Equinox; and a gale of wind having ſprung up, as is common at that ſeaſon, I went to look at it's effects on

how many tears has ſhe wiped away! how many hopes has ſhe inſpired, when there was no longer room for hope! how many doors of mercy thrown open

on the ſea-ſhore. It might be about noon. Several large boats had gone out of the harbour in the morning, on a fiſhing expedition. While I was obſerving their manœuvres, I perceived a company of country laſſes, handſome, as the *Cauchoiſes* generally are, coming out of the city, with their long white head dreſſes, which the wind ſet a flying about their faces. They advanced playfully to the extremity of the pier, which was, from time to time, covered with the ſpray which the daſhing of the waves excited. One of them kept aloof, ſad and thoughtful. She looked wiſtfully at the diſtant boats, ſome of which were hardly perceptible, amidſt a very black Horizon. Her comrades, at firſt, began to rally, with an intention to amuſe her: What, ſaid they, is your ſweetheart yonder? But finding her continue inflexibly penſive, they called out, Come, come, don't let us ſtop any longer here! Why do you make yourſelf ſo uneaſy? Return, return with us; and they reſumed the road that led to town. The young woman followed them with a ſlow pace, without making any reply, and when they had got nearly out of ſight, behind ſome heaps of pebbles which are on the road, ſhe approached a great crucifix, that ſtands about the middle of the pier, took ſome money out of her pocket, dropped it into the little cheſt at the foot of the croſs; then kneeled down, and with claſped hands, and eyes lifted up to Heaven, put up her prayer. The billows breaking with a deafening noiſe on the ſhore, the wind which agitated the large lanterns of the crucifix, the danger at ſea, the uneaſineſs on the land, confidence in Heaven, gave to the love of this poor country girl, an extent, and a dignity, which the Palaces of the Great cannot communicate to their paſſions.

open to the guilty! how many ſupports given to innocence! Ah! when her altars aroſe amidſt our foreſts, enſanguined by the knives of the Druids, how the oppreſſed flocked to them in queſt of an aſylum! How many irreconcileable enemies there embraced with tears! Tyrants, melted to pity, felt, from the height of their towers, their arms drop from their hands. They had known the Empire only of terror, and they ſaw that of charity ſpring up in it's room. Lovers ran thither to mingle vows, and to ſwear a mutual affection, which ſhould ſurvive even the tomb. She did not allow a ſingle day to hatred, and promiſed eternity to love. Ah! if this Religion was deſigned only for the conſolation of the miſerable, it was, of courſe, deſigned to promote that of the Human Race!

It was not long before her tranquillity returned; for all the boats gained the harbour a few hours afterward, without having ſuſtained the ſlighteſt injury.

Religion has been frequently calumniated, by having the blame of our political evils laid to her charge. Hear what *Montagne*, who lived in the midſt of thoſe civil wars, ſays on this ſubject: "Let us confeſs the truth: Whoever ſhould make "a draught from the army, even the moſt legally embodied, "of thoſe who ſerve from the zeal of a religious affection, and "add to them, ſuch as regard only the protection of the laws "of their Country, or the ſervice of the Prince, would find it "difficult to make up of them one complete company of ſol-"diers." *Eſſays*, Book ii. chap. xii. page 317.

Whatever

Whatever may may have been ſaid of the ambition of the Church of Rome, ſhe has frequently interpoſed in behalf of ſuffering humanity. I produce an inſtance taken at random, and which I ſubmit to the judgment of the Reader. It is on the ſubject of the African ſlave-trade, which is practiſed without ſcruple by all the Chriſtian and maritime Powers of Europe, and condemned by the Court of Rome. "In the ſecond year of his "miſſion, *Merolla* was left alone at Sogno, by "the death of the Superior General, whoſe place "Father *Joſeph Buſſeto* went to fill at the Convent "of Angola. Much about the ſame time, the "Capuchin miſſionaries received a letter from "Cardinal *Cibo*, in name of the ſacred College. "It contained ſevere reproaches on the continua- "tion of the ſale of ſlaves, and earneſt remon- "ſtrances, to put an end, at laſt, to that abomi- "nable traffic. But they ſaw little appearance of "having it in their power to execute the orders of "the Holy See, becauſe the commerce of the "Country conſiſts entirely in ivory and ſlaves *." All the efforts of the miſſionaries iſſued ſimply in an excluſion of the Engliſh from a ſhare of the traffic.

* Extract from the *General Hiſtory of Voyages*, by the Abbé *Prevoſt*. Book xxii. page 180: *Merolla*. A. D. 1633.

 The

The Earth would be a paradiſe, were the Chriſtian Religion producing univerſally it's native effects. It is Chriſtianity which has aboliſhed ſlavery in the greateſt part of Europe. It wreſted, in France, enormous poſſeſſions out of the hands of the Earls and Barons, and deſtroyed there a part of their inhuman rights, by the terrors of a life to come. But the people oppoſed ſtill another bulwark to tyranny, and that was the power of the Women.

Our Hiſtorians are at pains to remark the influence which ſome women have had under certain reigns, but never that of the ſex in general. They do not write the Hiſtory of the Nation, but merely the Hiſtory of the Princes. Women are nothing in their eyes, unleſs they are decorated with titles. It was, however, from this feeble diviſion of Society, that Providence, from time to time, called forth it's principal defenders. I ſay nothing of thoſe intrepid females, who have repelled, even by arms, the invaders of their country, ſuch as *Joan of Arc*, to whom Rome and Greece would have erected altars: I ſpeak of thoſe who have defended the nation from internal foes, much more formidable ſtill than foreign aſſailants; of thoſe who are powerful from their weakneſs, and who have nothing to fear, becauſe they have nothing to hope.

From

From the ſceptre down to the ſhepherdeſſes crook, there is, perhaps, no country in Europe where women are treated ſo unkindly by the Laws, as in France; and there is no one where they have more power. I believe it is the only kingdom of Europe where they are abſolutely excluded from the throne. In my country, a father can marry his daughters, without giving them any other portion than a chaplet of roſes: at his death, they have all together only the portion of a younger child. This unjuſt diſtribution of property is common to the clown as to the gentleman. In the other parts of the kingdom, if they are richer, they are not happier. They are rather ſold, than given, in marriage. Of a hundred young women, who there enter into the married ſtate, there is not, perhaps, one who is united to her lover. Their condition was even ſtill more wretched in former times. Ceſar, in his Commentaries, informs us, "That the huſband had the power of life and "death over his wife, as well as over his children; "that when a man of noble birth happened to die, "the relations of the family aſſembled; if there "was the ſlighteſt ſhadow of ſuſpicion againſt his "wife, ſhe was put to the torture as a ſlave; and "if found guilty, was condemned to the flames, "after a previous proceſs of inexpreſſible ſuffer-"ing*."

* Gallic War, book vi.

What

What is singularly strange, at that very time, and even before, they enjoyed the most unbounded power. Hear what the good *Plutarch* says on the subject, as he is communicated to us, through the medium of the good *Amyot*. "Before the Gauls "had passed the Alps, and got possession of that "part of Italy which they now inhabit, a violent "and alarming sedition arose among them, which "issued in a civil war. But their wives, just as "the two armies were on the point of engaging, "threw themselves into the intervening space; "and taking up the cause of their dissension, dis-"cussed it with so much wisdom, and decided "upon it with such moderation and equity, that "they gave complete satisfaction to both parties. "The result was an unanimous return to mutual "benevolence, and cordial friendship, which re-"united not only city to city, but family to fa-"mily: and this with so much effect, that ever "since, they invariably consult their wives, on all "deliberations, whether respecting war or peace; "and they settle all disputes and differences with "neighbours and allies, conformably to the advice "of the women. Accordingly, in the agreement "which they made with *Hannibal*, when he march-"ed through Gaul, among other stipulations, this "was one, that if the Gauls should have occasion "to complain of any injury done them by the "Carthaginians, the cause was to be submitted to

"the

" the decision of the Carthaginian Officers and
" Governors serving in Spain : and if, on the con-
" trary, the Carthaginians could allege any ground
" of complaint against the Gauls, the matter
" should be left to the determination of the Wives
" of the Gauls *."

It will be difficult to reconcile these two clashing authorities, unless we pay attention to the re-action of human things. The power of women proceeds from their oppression. The commonalty, as oppressed as they, gave them their confidence, as they had given theirs to the people. Both parties were wretched, but misery attracted them toward each other, and they made a common stock of woe. They decided with the greater equity, that they had nothing to gain or lose. To the women we must ascribe the spirit of gallantry, the thoughtlessness, the gaiety, and, above all, the taste for raillery, which have, at all times, characterized our Nation. With a song simply, they have oftener than once made our tyrants tremble. Their ballads have sent many a banner into the field, and put many a battalion to flight. It is by them that ridicule has acquired such a prodigious influence in France, as to have become the most

* Plutarch, vol. ii. in folio : Virtuous Actions of Women; page 233.

terrible

terrible weapon which it is poſſible to employ, though it be the armour only of the weak, becauſe women are the firſt to lay hold of it; and as, from national prejudice, their eſteem is the firſt of bleſſings, it follows, that their contempt muſt be the moſt grievous calamity imaginable *.

Cardinal *Richlieu* having, at laſt, reſtored to Kings the legiſlative authority, thereby ſtripped the Nobility, in a great meaſure, of the power of injuring each other by civil wars; but he was not able to aboliſh among them the rage for duelling, becauſe the root of this prejudice is in the people, and becauſe edicts have no power over their opinions when they are oppreſſed. The edict of the Prince prohibits the gentleman to go to meet his antagoniſt in ſingle combat, and the opinion of his valet-

* A provincial Academy, ſome years ago, propoſed this queſtion as the ſubject for the prize of Saint *Louis*; " In what " manner female education might be made to contribute to- " ward rendering men better?" I treated it, and was guilty of committing two faults of ignorance, not to mention others. The firſt was, my preſuming to write on ſuch a ſubject, after *Fenelon* had compoſed an excellent treatiſe on the education of young women; and the ſecond, to think of arguing for truth in an Academy. The one in queſtion did not beſtow the prize, and recalled it's ſubject. All that can be ſaid on this queſtion is, that in every country, women are indebted for their empire, only to their virtues, and to the intereſt which they have always taken in behalf of the miſerable.

valet-de-chambre forces him out. The Nobility arrogate to themſelves all the national honour, but the People determine for them the object of it, and allot it's proportions. *Louis* XIV. however, gave back to the People, a part of their natural liberty, by means of his very deſpotiſm. As he hardly ſaw any thing elſe in the world, except himſelf, every one appeared in his eyes nearly equal. It was his wiſh, that all his ſubjects ſhould have permiſſion to contribute their exertions toward the extenſion of his glory, and he rewarded them in proportion as ſuch exertions had promoted this end. The deſire of pleaſing the Prince reduced all ranks to a level. Under that reign, of conſequence, were ſeen multitudes of men of all claſſes, rendering themſelves eminent, each in his ſeveral way. But the misfortunes of that great King, and perhaps his policy, having obliged him to deſcend to the ſale of employments, of which the pernicious example had been ſet him by his predeceſſors, and which has been extended, ſince his time, to the meaneſt offices in the State, this gave the finiſhing ſtroke to the ancient preponderancy of the Nobility; but it gave riſe, in the Nation, to a power much more dangerous; that of gold. This, this has levelled every rival influence, and triumphed over even the power of women *.

* As moſt men are ſhocked at abuſes, only by ſeeing them in detail, becauſe every thing great dazzles, and commands reſpect, I ſhall

And first, the Nobility, having preserved a part of their privileges, in the country; trades-people possessed of some fortune, do not chuse to live there, for fear of being exposed, on the one hand, to insult, and of being confounded, on the other, with the peasantry, by paying tallage and drawing for the militia. They like better to live in small cities, where a multitude of financial employments and revenues enable them to subsist in indolence and listlessness, rather than to vivify the fields which degrade their cultivators. Hence it comes to pass, that small landed estates sink in value, and are year after year falling into the hands of the great proprietors. The rich, who make the purchases of them, parry the inconveniencies to which they are subject, either by their

I shall here produce a few instances of the effect of venality in the lower orders of Society. All the subaltern conditions which naturally rank under others, of right, are become the superiors, in fact, merely because they are the richer. Accordingly, it is the Apothecary, now-a-days, who has the employing of the Physician; the Attorney of the Advocate; the Handicraft of the Merchant; the Master-mason of the Architect; the Bookseller of the Scholar, even those of the Academy; the Chair-hirer in Church, of the Preacher, &c.——I shall say no more. It is easy to see to what all this leads. From this venality alone must ensue the decline of all talents. It is, in fact, abundantly perceptible, on comparing those of the age in which we live, with those of the age of *Louis* XIV.

personal

personal nobility, or by buying off the imposts under which they labour.

I know well, that a celebrated Farmer-general, some years ago, greatly cried up the over-grown proprietors, because, as he alleged, they could afford to give a better bargain than the smaller: but without considering whether they could sell corn cheaper, and all the other consequences of the *nett produce*, which attempts have been made to establish as the alone standard and object of agriculture, nay, of morality; it is certain, that if any given number of wealthy families were, year after year, to purchase the lands which might lie commodiously for them, such family bargains would speedily become fatal to the State. I have often been astonished, that there is no law in France, to prevent the unbounded accumulation of landed property. The Romans had censors, who limited, in the first instance, the extent of a man's possession to seven acres, as being sufficient for the subsistence of one family. By the word which we translate *acre*, was understood as much land as a yoke of oxen could plow in one day. As Rome increased in luxury, it was extended to five hundred: but even this Law, though indulgent in the extreme, was soon infringed, and the infraction hurried forward the ruin of the Republic.

"Extensive

"Extenſive parks," ſays *Pliny* *, "and un-
"unbounded domains, have ruined our own Italy,
"and the Provinces which the Romans have con-
"quered: for that which occaſioned the victories,
"obtained by *Nero* (the Conſul) in Africa, was
"ſimply this, ſix men were in poſſeſſion of al-
"moſt one half of Numidia, when *Nero* defeated
"them." *Plutarch* informs us, that in his time, under *Trajan*, you could not have raiſed three thouſand men in all Greece, which had formerly furniſhed armies ſo numerous; and that you might have ſometimes travelled a whole day, on the high roads, without meeting a human being, except now and then a ſtraggling ſolitary ſhepherd. The reaſon was, Greece had by this time been parcelled out among a few great proprietors.

Conquerors have always met with a very feeble reſiſtance in countries where property is very unequally divided. We have examples of this in all ages, from the invaſion of the Lower-Empire by the Turks, down to that of Poland in our own days. Overgrown eſtates deſtroy the ſpirit of patriotiſm, at once, in thoſe who have every thing, and in thoſe who have nothing. "The ſhocks of "corn," ſaid *Xenophon*, "inſpire thoſe who raiſe "them with courage to defend them. The ſight

* Natural Hiſtory, Book xviii. chap. iii. and vi.

"of

" of them in the fields, is as a prize exhibited in
" the middle of the theatre, to crown the con-
" queror."

Such is the danger to which exceſſive inequality of property expoſes a State outwardly; let us take a look of the internal miſchief which it produces. I have heard a perſon of undoubted veracity relate, that an old Comptroller-general having retired to his native province, made a very conſiderable purchaſe in land. His eſtate was ſurrounded by about fifty ſmall manors, the annual rent of which might be from fifteen hundred to two thouſand livres each *. The proprietors of theſe were good country-gentlemen, who had through a ſucceſſion of generations ſupplied their Country with gallant officers and reſpectable matrons. The Comptroller-general, deſirous of extending his landed property, invited them to his caſtle, entertained them magnificently, gave them a taſte for Pariſian luxury, and concluded with an offer of double the value of their eſtates, if they thought proper to diſpoſe of them. They to a man accepted his offer, imagining they were going to double their revenue, and in the hope, no leſs fallacious to a country gentleman, of ſecuring a powerful protector at Court. But the difficulty of laying

* About from ſixty to fourſcore guineas.

out their money to advantage, a taſte for elegant expenſe, inſpired by the ſight of ſums of money ſuch as they never before had in their coffers, in a word, frequent journies to Paris, and back to the country, ſoon melted away the price of their patrimony. Theſe reſpectable families diſappeared one after another; and thirty years afterward, one of their deſcendants, who could reckon among his anceſtors a long ſucceſſion of captains of dragoons, and knights of St. *Louis*, was found ſcampering over his paternal inheritance, on foot, ſoliciting the place of keeper of a ſalt-office, to keep him from ſtarving.

Such are the miſchiefs produced among the citizens of a country, by the exceſſive accumulation of property. Thoſe produced on the ſtate of the lands are not leſs to be deplored. I was, ſome years ago, in Normandy, at the houſe of a gentleman in affluent circumſtances, who cultivated, himſelf, a very conſiderable graſs-farm, ſituated on a riſing ground, of a very indifferent ſoil. He walked me round his vaſt encloſure, till we came to a large ſpace, completely over-run with moſſes, horſetail, and thiſtles. Not a blade of good graſs was to be ſeen. The ſoil, in truth, was at once ferruginous and marſhy. They had interſected it with many trenches, to drain off the water, but all to no purpoſe: nothing could grow.

Immediately

Immediately below, there was a ſeries of ſmall farms, the face of which was clothed with graſſy verdure, planted with apple-trees in full fruit, and encloſed with tall alder-trees. The cows were feeding among the trees of the orchards, while the country-girls ſung, as they were ſpinning, around the door. Theſe "native wood-notes wild," repeated from diſtance to diſtance, under the ſhade of the trees, communicated to this little hamlet, a vivacity which increaſed ſtill more the nakedneſs, and the depreſſing ſolitude, of the ſpot where we were. I aſked it's poſſeſſor, How it came to paſs, that lands ſo contiguous, ſhould preſent an aſpect ſo very different?

"They are," replied he, "of the ſelf-ſame na-
"ture, and there formerly were, on this very ſpot,
"ſmall houſes ſimilar to thoſe which you ſee be-
"low. I made a purchaſe of them, but ſadly to my
"loſs. Their late inhabitants having abundance
"of leiſure, and a ſmall compaſs of ground on
"their hands, cleared away the moſſes, the thiſ-
"tles, manured it; up ſprung the graſs. Had
"they a mind to plant? They dug holes, they
"removed the ſtones, and filled them with good
"mould, which they went to collect from the
"bottom of the ditches, and along the high-way's
"ſide. Their trees took root and proſpered.
"But all theſe neceſſary operations coſt me incre-

"dible time and expenſe. I never was able to "make out the common intereſt of my money."

I am bound in juſtice to remark, that this wretched ſteward, but excellent gentleman, in every ſenſe of that word, was at that very time relieving, by his charity, moſt of thoſe ancient farmers, now diſabled to earn a livelihood. Here, then, is another inſtance of both men and lands rendered uſeleſs, by the injudicious extenſion of property. It is not upon the face of vaſt domains, but into the boſom of induſtry, that the FATHER of Mankind pours out the precious fruits of the Earth.

I could eaſily demonſtrate, that enormous property is the principal cauſe of the multiplication of the poor all over the kingdom, for the very reaſon which has procured it the elogium of many of our Writers, namely, that it ſpares men the labours of agriculture. There are many places, where there is no employment to give the peaſantry during a conſiderable part of the year; but I ſhall inſiſt only on their wretchedneſs, which ſeems to increaſe with the riches of the diſtrict where their lot is caſt.

The diſtrict of Caux is the moſt fertile country which I know in the World. Agriculture, on the great

great ſcale, is there carried to the height of perfection. The deepneſs of the ſoil, which, in ſome places, extends to five and ſix feet; the manure ſupplied from the ſtratum of marl over which it is raiſed, and that of the marine plants on it's ſhores, which are ſpread over it's ſurface, concur toward clothing it with the nobleſt vegetables. The corn, the trees, the cattle, the women, the men are there handſomer and more vigorous than any where elſe. But as the Laws have aſſigned, in that province, in every family, two thirds of the landed property to the firſt-born, you find there unbounded affluence, on the one hand, and extreme indigence, on the other.

I happened one day to be walking through this fine country; and admired, as I went, it's plains ſo well cultivated, and ſo extenſive, that the eye loſes itſelf in the unbounded proſpect. Their long ridges of corn, humouring the undulations of the plain, and terminating only in villages, and caſtles ſurrounded with venerable trees, preſented the appearance of a Sea of verdure, with here and there an iſland riſing out of the Horizon. It was in the month of March, and very early in the morning. It blew extremely cold from the North-eaſt. I perceived ſomething red running acroſs the fields, at ſome diſtance, and making toward the great road, about a quarter of a league before me. I

 quickened

quickened my pace, and got up in time enough to ſee that they were two little girls in red jackets and wooden ſhoes, who, with much difficulty, were ſcrambling through the ditch which bounded the road. The talleſt, who might be about ſix or ſeven years old, was crying bitterly. " Child," ſaid I to her, " what makes you cry, and whither " are you going at ſo early an hour?" " Sir," replied ſhe, " my poor mother is very ill. There " is not a meſs of broth to be had in all our pa- " riſh. We are going to that church in the bot- " tom, to try if the Curé of this pariſh can find us " ſome. I am crying becauſe my little ſiſter is " not able to walk any farther." As ſhe ſpake, ſhe wiped her eyes with a bit of canvas, which ſerved her for a petticoat. On her raiſing up the rag to her face, I could perceive that ſhe had not the ſemblance of a ſhift. The abject miſery of theſe children, ſo poor, in the midſt of plains ſo fruitful, wrung my heart. The relief which I could adminiſter to them was ſmall indeed. I myſelf was then on my way to ſee miſery in other forms.

The number of wretches is ſo great, in the beſt cantons of this province, that they amount to a fourth, nay, to a third of the inhabitants in every pariſh. The evil is continually on the increaſe. Theſe obſervations are founded on my perſonal experience,

experience, and on the teſtimony of many pariſh-miniſters of undoubted veracity. Some Lords of the Manor order a diſtribution of bread to be made, once a week, to moſt of their peaſantry, to eke out their livelihood. Ye ſtewards of the public, reflect that Normandy is the richeſt of our provinces; and extend your calculations, and your proportions, to the reſt of the Kingdom! Let the morality of the financier ſuperſede that of the Goſpel: for my own part, I deſire no better proof of the ſuperiority of Religion to the reaſonings of Philoſophy, and of the goodneſs of the national heart to the enlarged views of our policy, than this, that notwithſtanding, the deficiency imputable to our laws, and our errors in almoſt every reſpect, the State continues to ſupport itſelf, becauſe charity and humanity almoſt conſtantly interpoſe in aid of Government.

Picardy, Brittany, and other provinces, are incomparably more to be pitied than Normandy. If there be twenty-one millions of perſons in France, as is alleged, there muſt be then, at leaſt, ſeven millions of paupers. This proportion by no means diminiſhes in the cities, as may be concluded from the number of foundlings in Paris, which amounts, one year with another, to ſix or ſeven thouſand, whereas the number of children, not abandoned by their parents, does not exceed,

in that city, fourteen or fifteen thouſand. And it is reaſonable to ſuppoſe, that among theſe laſt, there muſt be a very conſiderable proportion the progeny of indigent families. The others are partly, it muſt be admitted, the fruit of libertiniſm ; but irregularity in morals proves equally the miſery of the people, and even more powerfully, as it conſtrains them at once to renounce virtue, and to ſtifle the very firſt feelings of Nature.

The ſpirit of finance has accumulated all theſe woes on the head of the People, by ſtripping them of moſt of the means of ſubſiſtence ; but, what is infinitely more to be regretted, it has ſapped the foundations of their morality. It no longer eſteems or commends any but thoſe who are making a fortune. If any reſpect be ſtill paid by it, to talents and virtue, this is the only reaſon, it conſiders theſe as one of the roads to wealth. Nay, what, in the phraſe of the world, is called good company, has hardly any other way of thinking. But I ſhould be glad to know, whether there be any honourable method of making a fortune, for a man who has not already got money, in a country where every thing is put up to ſale. A man muſt, at leaſt, intrigue, unite himſelf to a party and flatter it, ſecure puffers and protectors ; and for this purpoſe he muſt be diſhoneſt, corrupt, adulate, deceive, adopt another man's paſſions, good or bad,

bad, in a word, let himſelf down in one ſhape or another. I have ſeen perſons attain every variety of ſituation; but, I ſpeak it without reſerve, whatever praiſe may have been beſtowed on their merit, and though many of them really had merit, I never ſaw any one, even of the ſtricteſt honour, raiſe himſelf, and preſerve his ſituation, but by the ſacrifice of ſome virtue.

Let us now look at the re-actions of theſe evils. The people uſually balance the vices of their oppreſſors by their own. They oppoſe corruption to corruption. From the prolific womb of vulgar debauchery iſſues a monſtrous ſwarm of buffoons, comedians, dealers in luxury of every ſort, nay, even men of letters, who, to flatter the rich, and ſave themſelves from indigence, extend diſſipation of manners and of opinions to the remoteſt extremity of Europe. In the claſs of the unmarried vulgar, we find the moſt powerful bulwark oppoſed to rank and wealth. As this is a very numerous body, and comprehends not only the youth of both ſexes, who, with us, do not form early marriages, but an infinite number of men beſides, who, from peculiarity of condition, or want of fortune, are deprived, as youth is, of the honours of Society, and of the firſt pleaſures of Nature, they conſtitute a formidable aſſociation, which has all reputations at their mercy, together with the

 power

power of difturbing the peace of all families. Thefe are the perfons who retail, for a dinner, that inexhauftible collection of anecdotes, favourable or unfavourable, which are, in every inftance, to regulate public opinion.

It is not in the power of a rich man to marry a handfome wife, and enjoy himfelf at home in his own way; thofe perfons lay him under the neceffity, unlefs he would be laughed at, that is, under pain of the fevereft evil which can befal a Frenchman, of making his wife the central point of all fafhionable fociety; he muft exhibit her at all public places; and adopt the manners which his plebeian dictators think proper to prefcribe, however contradictory they may be to Nature, and however inconfiftent with conjugal felicity. While, as a regularly embodied army, they difpofe of the reputation and the pleafures of the rich, two of the columns attack their fortune in front, in two different ways. The one employs the method of intimidation, and the other that of feduction.

I fhall not here confine my reflections to the power and wealth gradually acquired by feveral religious orders, but extend them to their number in general. Some politicians pretend, that France would become too populous, were there no convents in it. Are England and Holland overpeopled,

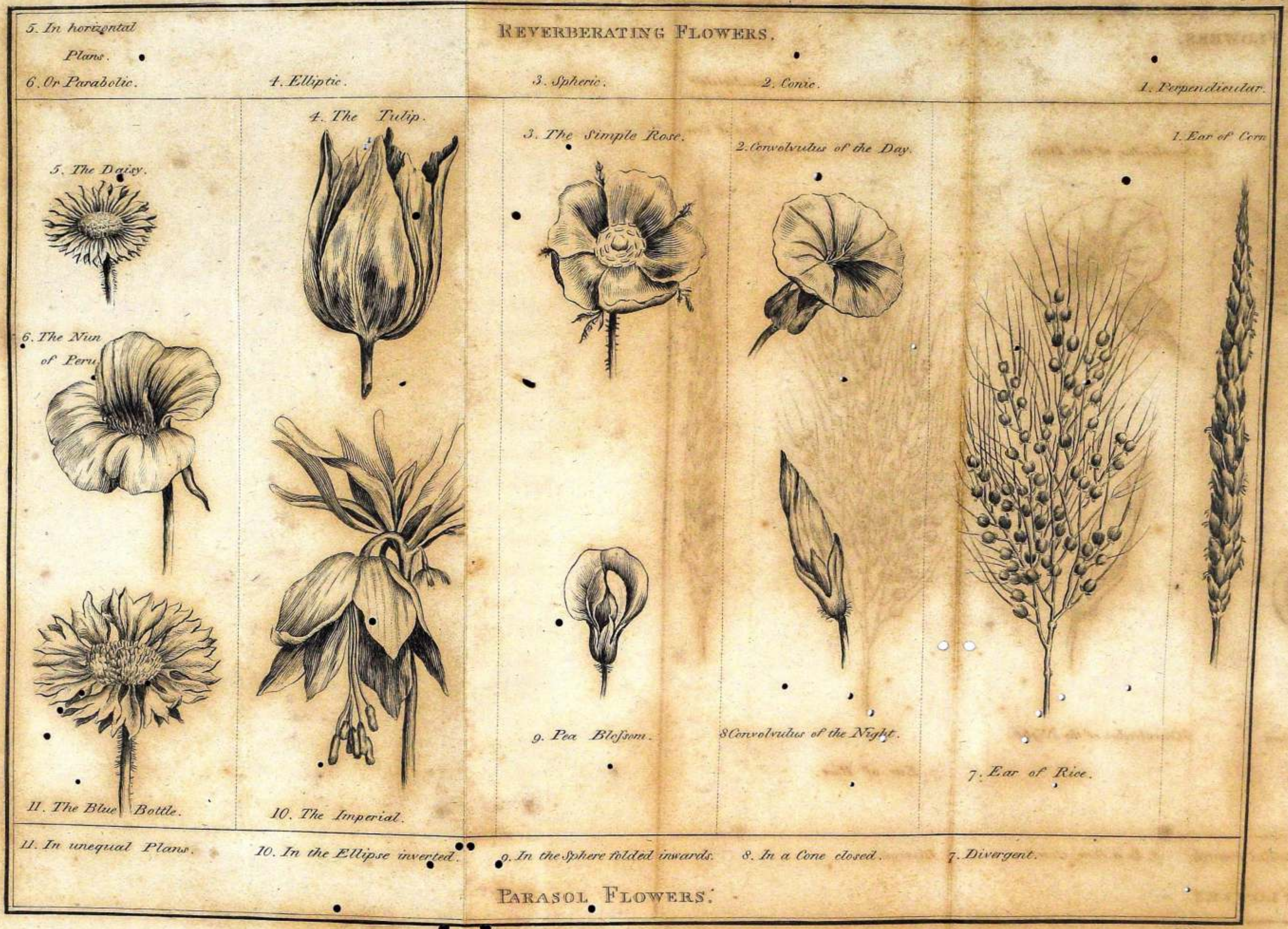
peopled, where there is no ſuch thing? It betrays, beſides, little acquaintance with the reſources of Nature. The more inhabitants any country contains, the more productive it is. France could maintain, perhaps, four times more people than it now contains, were it, like China, parcelled out into a great number of ſmall freeholds. We muſt not form our judgment of it's fertility from it's immenſe domains. Theſe vaſt, deſerted diſtricts yield only one crop in two years, or, at moſt, two in three. But with how many crops, and how many men, are ſmall tenements covered! Obſerve, in the vicinity even of Paris, the meadow-land of St. Gervais. The ſoil is, in general, of a middling quality; and, nothwithſtanding, there is no ſpecies of vegetable which our Climate admits of, but what the induſtry of cultivation is there capable of producing. You ſee at once fields of corn, meadow grounds, kitchen-gardens, flower-plots, fruit-trees, and ſtately foreſt-trees. I have ſeen there, in the ſame field, cherry-trees growing in potatoe-beds; vines clambering up along the cherry-trees, and lofty walnut-trees riſing above the vines; four crops, one above another, within the earth, upon the earth, and in the air. No hedge is to be ſeen there, ſeparating poſſeſſion from poſſeſſion, but an inter-communication worthy of the Golden Age.

Here

Here a young ruſtic, with a baſket and ladder, mounts a fruit-tree, like another *Vertumnus* ; while ſome young girl, in a winding of the adjoining valley, ſings her ſong loud enough to be heard by him, preſenting the image of another *Pomona*. If cruel prejudices have ſtricken with ſterility and ſolitude a conſiderable part of France, and henceforth allot the poſſeſſion of a great Kingdom to a little handful of proprietors, how is it that, inſtead of Founders of new orders, Founders of new colonies do not ariſe among us, as among the Egyptians and the Greeks ? Shall France never have to boaſt of an *Inachus*, and of a *Danaüs ?* Why do we force the African tribes to cultivate our lands in America, while our own peaſantry is ſtarving for want of employment at home ? Why do we not tranſport thither our miſerable poor by families ; children, old men, lovers, couſins, nay, the very churches and ſaints of our villages, that they may find in thoſe far diſtant lands, the loves and the illuſions of a country.

Ah ! had liberty and equality been invited to thoſe regions, where Nature does ſo much with moderate cultivation, the cottages of the New World would, at this day, have been preferable to the palaces of the Old. Will another Arcadia never ſpring up in ſome corner of the Earth ? When I imagined I had ſome influence with men

in


Reverberating Flowers.
5. In horizontal Plans.
6. Or Parabolic.
4. Elliptic.
3. Spheric.
2. Conic.
1. Perpendicular.
4. The Tulip.
3. The Simple Rose.
2. Convolvulus of the Day.
1. Ear of Corn
5. The Daisy.
6. The Nun of Peru
9. Pea Blossom.
8 Convolvulus of the Night.
7. Ear of Rice.
11. The Blue Bottle.
10. The Imperial.
11. In unequal Plans.
10. In the Ellipse inverted.
9. In the Sphere folded inwards.
8. In a Cone closed.
7. Divergent.
Parasol Flowers.

in power, I endeavoured to exert it in projects of this nature; but I have never had the felicity of falling in with a ſingle one, who took a warm intereſt in the happineſs of Mankind. I have endeavoured to trace, at leaſt, the plan of them, as a legacy to thoſe who ſhall come after me, but the clouds of calamity have ſpread a gloom over my own life; and the poſſibility of enjoying happineſs, even in a dream, is no longer my portion.

Politicians have conſidered war itſelf as neceſſary to a State, becauſe, as they pretend, it takes off the ſuperflux of Mankind. In general, they have a very limited knowledge of Human Nature. Independent of the reſources of the ſub-diviſion of property into ſmall allotments, which every where multiply the fruits of the Earth, we may reſt aſſured, that there is no country but what has the means of emigration within it's reach, eſpecially ſince the diſcovery of the New World. Beſides, there is not a ſingle State, even among thoſe which are beſt peopled, but what contains immenſe tracks of uncultivated land. China and Bengal are, I believe, the countries on the Globe which contain moſt inhabitants. In China, nevertheleſs, are many and extenſive deſerts, amidſt it's fineſt provinces, becauſe avarice attracts thoſe who ſhould cultivate them, to the vicinity of great rivers, and to the cities, for the conveniency of commerce.

commerce. Many enlightened travellers have made this obſervation.

Hear what that honeſt Dutchman, *Walter Schouten*, ſays of the deſerts of Bengal. "Toward the "South, along the ſea-coaſt, at the mouth of the "Ganges, there is a very conſiderable extent of "territory, deſert and uncultivated, from the in- "dolence and inactivity of the inhabitants, and "alſo from the fear which they are under of the "incurſions of thoſe of Arracan; and of the cro- "codiles and other monſters which devour men, "lurking in the deſerts, by the ſides of brooks, "of rivers, of moraſſes, and in caverns *." Obſtacles very inconſiderable, it muſt be allowed, in a Nation where Fathers ſometimes ſell their children for want of the means of ſupporting them! *Bernier*, the phyſician, remarks likewiſe, in his travels over the Mogul Empire, that he found a great many, but deſerted iſlands, at the mouth of the Ganges.

We muſt aſcribe, in general, to the exceſſive number of bachelors, that of profligate women; which univerſally are in exact proportion to each other. This evil, too, is the effect of a natural re-action. As the two ſexes are born and die in

* *Walter Schouten*'s Voyage to the Eaſt-Indies, vol. ii. page 154.

equal

equal numbers, every man comes into the world, and leaves it, in company with his female. Every man, therefore, who prefers celibacy to the married ſtate, dooms a female, at the ſame time, to a ſingle life. The eccleſiaſtical order robs the ſex of ſo many huſbands; and the ſocial order deprives them of the means of ſubſiſtence. Our manufactures and machinery, ſo ingeniouſly induſtrious, have ſwallowed up almoſt all the arts by which they were formerly enabled to earn a livelihood. I do not ſpeak of thoſe who knit ſtockings, embroider, weave, &c. employments which, in better times, ſo many worthy matrons followed, but which are now entirely engroſſed by perſons bred to the buſineſs, but we have, forſooth! taylors, ſhoemakers, male hair-dreſſers for the ladies. We have men-milliners, dealers in linen, gauze, muſlin, gum-flowers. Men are not aſhamed to aſſume to themſelves the eaſy and commodious occupations, and to leave to the poor women, the rougher and more laborious. We have female dealers in cattle, in pigs, driving through fairs on horſeback: there are others who vend bricks, and navigate barges, quite embrowned with the ſun; ſome labour in quarries.

We meet multitudes, in Paris, ſweating under an enormous load of linen, under heavy water-pails, blacking ſhoes on the quays; others yoked,

like

like beaſts, to little carts. Thus the ſexes unſex themſelves; the men dwindle into females, the women harden into men. The greateſt part of females, in truth, would rather turn their charms to account than their ſtrength. But what miſchief is every day produced by women of the town! What conjugal infidelity, what domeſtic plunder, what quarrelling, beating, duelling, do they occaſion! Scarcely has night begun to ſpread her curtain, when every ſtreet is inundated with them; every place of reſort ſwarms with theſe unhappy creatures; at every corner they lie in wait for their prey. Others of them, known by the name, now of ſome conſideration among the vulgar, of *kept miſtreſſes*, loll it away to the opera and playhouſe, in magnificent equipages. They take the lead, at the balls and feſtivals of the better ſort of our trades-folks. For them, in part, ariſe in the ſuburbs, in the midſt of gardens in the Engliſh taſte, gay alcoves in the Egyptian ſtile. Every one of them bent on melting down a fortune. It is thus GOD puniſhes the oppreſſors of a People, by the oppreſſed. While the rich are dreaming that they are expending their ſubſtance in tranquillity, men ſpringing from the dregs, plunder them in their turn by the torments of opinion: if they are ſo fortunate as to eſcape theſe, fall they muſt into the hands of abandoned women; who, if they ſhould happen to miſs the fathers, make

ſure of indemnifying themſelves upon the children.

An attempt has been made, for ſome years paſt, to give encouragement to virtue, in our poor country girls, by feſtivals called *Roſieres* (roſe-feaſts); for as to thoſe who are rich, and our city dames in buſineſs, the reſpect which they owe to their fortune, permits them not to put themſelves on a level with the female peaſantry, even at the foot of the altar. But you who beſtow crowns on virtue, are you not afraid of blighting the prize by your touch? Know you not, that among Nations who really honoured virtue, the Prince only, or the voice of the Country, preſumed to confer the crown? The pro-conſul *Apronius* refuſed the civic crown to a ſoldier who had merited it, becauſe he conſidered this privilege as belonging only to the Emperor. *Tiberius* beſtowed it, finding fault with *Apronius* for not having done it, in quality of Pro-conſul *. Have you been informed in what reſpect virginity was held among the Romans? The Veſtals had the maces of the Prætors borne before them. We have mentioned, on a former occaſion, that their preſence, merely, beſtowed a pardon on the criminal going to execution, provided, however, the Veſtals could affirm,

* *Annals of Tacitus*, book iii. year 6.

that

that they did not paſs that way expreſsly for the purpoſe. They had a particular bench allotted them at the public feſtivals; and ſeveral Empreſſes requeſted, as the higheſt honour they could aſpire to, permiſſion to ſit among them. And our Paris trades-people, too, crown our ruſtic Veſtals *! Noble and generous effort! They beſtow a garland of roſes upon indigent virtue, in the country; while, in the city, vice flaunts about glittering with diamonds.

On the other hand, the puniſhments of guilt appear to me as injudiciouſly adjuſted as the rewards of virtue. We too frequently hear called aloud in our ſtreets theſe terrible words, *The ſentence of condemnation!* but never, *The ſentence of reward.* Crimes are repreſſed by infamous puniſhments. A ſimple brand inflicted, inſtead of reforming the criminal, frequently plunges him deeper in guilt, and not ſeldom drives his whole family headlong into vicious courſes. Where, let me aſk, can an unhappy wretch find refuge, who has been publicly whipped, branded, and drummed out? Neceſſity has made him a thief; indignation and deſpair will hurry him on to murder.

* They *condeſcend*, likewiſe, to permit them to eat at the ſame table with themſelves, for that day. See the journals of the feſtivity, which break out into raptures on this occaſion.

His

His relations, diſhonoured in the public eſtimation, abandon their home, and become vagabonds. His ſiſters give themſelves up to proſtitution.

Theſe effects of the fear, which the hangman impreſſes on the lower orders, are conſidered as prejudices which are ſalutary to them. But they produce, as far as I am able to judge, unſpeakable miſchief. The vulgar extend them to actions the moſt indifferent, and convert them into a bitter aggravation of miſery. Of this I witneſſed an inſtance on board a veſſel, in which I was a paſſenger, on my return from the Iſle of France. I obſerved that not one of the ſailors would eat in company with the cook of the ſhip; they hardly deigned even to ſpeak to him. I enquired the reaſon of this at the Captain. He told me, that being at Pégu, about ſix months before, he had left this man on ſhore, to take charge of a warehouſe which the people of the country had lent him. When night came on, theſe people locked the door of it, and carried home the key with them. The ſtore-keeper being on the inſide, and not having it in his power to go out to diſburthen nature, was under the neceſſity of eaſing himſelf in a corner. Unfortunately, this warehouſe was likewiſe a church. In the morning the proprietors came and opened the door; but obſerving that the

the place was polluted, they fell upon the poor ſtore-keeper, with loud exclamations, bound him faſt, and delivered him over to the executioner, who would have immediately hanged him, unleſs the Captain of the veſſel, ſeconded by a Portugueze Biſhop and the King's brother, had haſtened to interpoſe in his behalf, and ſaved him from the gallows. From that moment, the ſailors conſidered their countryman as degraded, from having paſſed, as they alleged, through the hands of the hangman.

This prejudice did not exiſt among either the Greeks or Romans. There are no traces of it among the Turks, the Ruſſians, and the Chineſe. It does not proceed from a ſenſe of honour, nor even from the ſhame of guilt; it is attached only to the ſpecies of puniſhment. The decapitation of a man for the crimes of treaſon and perfidy, or being ſhot for deſertion, are conſidered as no ſtigma on the family of the perſon thus puniſhed. The people, ſunk below their level, deſpiſe that only which is peculiar to themſelves, and ſhew no pity in their deciſions, becauſe they are miſerable.

The wretchedneſs of the lower orders is, therefore, the principal ſource of our phyſical and moral maladies. There is another, no leſs fertile in miſchief, I mean the education of children. This branch of political

political economy engaged, among the Ancients, the attention of the greateſt Legiſlators. The Perſians, the Egyptians, and the Chineſe, made it the baſis of their Government. On this foundation *Lycurgus* reared the fabric of the Spartan Republic. We may even go ſo far as to affirm, that wherever there is no national education, there is no durable legiſlation. With us, education has no manner of reference to the conſtitution of the State. Our moſt celebrated Writers, ſuch as *Montagne*, *Fenelon*, *John James Rouſſeau*, have been abundantly ſenſible how defective our police is, in this reſpect: but deſpairing, perhaps, of effecting a reformation, they have preferred offering plans of private and domeſtic education, to patching up the old method, and adapting it to all the abſurdities of the preſent ſtate of Society. For my own part, as I am tracing up our evils to their ſource, only in the view of exculpating Nature, and in the hope that ſome favoured genius may one day ariſe to apply a remedy, I find myſelf farther engaged, to examine into the influence of education on our particular happineſs, and on that of our Country in general.

Man is the only ſenſible being who forms his reaſon on continual obſervations. His education begins with life, and ends only with death. His days would fleet away in a ſtate of perpetual uncertainty,

certainty, unlefs the novelty of objects, and the flexibility of his brain gave, to the impreffions of his early years, a character not to be effaced. At that period of life are formed the inclinations and the averfions which influence the whole of our exiftence. Our firft affections are likewife the laft. They accompany us through the events with which human life is variegated. They re-appear in old age, and then revive the fenfibilities of childhood with ftill greater force than thofe of mature age. Early habits have an influence even on animals, to fuch a degree, as to extinguifh their natural inftinct. *Lycurgus* exhibited a ftriking example of this to the Lacedemonians, in the cafe of two hounds taken from the fame litter, in one of which education had completely triumphed over Nature. But I could produce ftill ftronger inftances in the Human Species, in which early habit is found triumphant, fometimes, even over ambition. Hiftory furnifhes innumerable examples to this purpofe; I beg leave to produce one which has not yet obtained a place in the hiftoric page, and which is, apparently, of no great importance, but is highly interefting to myfelf, becaufe it brings to my recollection perfons who were juftly dear to me.

When I was in the Ruffian fervice, I frequently had the pleafure of dining at the table of his

Excellency

Excellency M. *de Villebois* *, Grand Maſter of Artillery, and General of the corps of engineers to which I belonged. I obſerved that there was every

* *Nicolas de Villebois* was a native of Finland, but deſcended from a French family originally from Brittany. In the battle of Francfort, he turned the tide of victory decidedly in favour of Ruſſia, by charging the Pruſſians at the head of a regiment of fuſileers of the artillery, of which he was then Colonel. This action, joined to his perſonal merit, procured him, the blue ribbon of St. Andrew, and ſoon after the place of Grand Maſter of the Ordnance, which he held at the time of my arrival in Ruſſia. Though his credit was then on the decline, he procured me an admiſſion into the ſervice of her Imperial Majeſty *Catharine* II. and did me the honour of preſenting me to her as one of the officers of his corps of engineers. He was making arrangements, in concert with General *Daniel de Boſquet*, Commander in Chief of the corps of engineers, for my farther promotion in it. They both employed all their powers of perſuaſion to retain me in that ſervice, and endeavoured to render it agreeable by every affectionate and polite attention, and by aſſurances of an honourable and advantageous eſtabliſhment. But the love which I bare to my country, in whoſe ſervice I had previouſly engaged, and to which I ſtill wiſhed to devote my ſervices, a fond wiſh, fed with vain hopes, by men of very high character, induced me to perſiſt in demanding my diſmiſſion, which I obtained, with Captain's rank, in 1765.

On leaving Ruſſia, I made an effort to ſerve my country, at my own expence, by joining that party in Poland which France had eſpouſed. There I was expoſed to very great riſks, having been made priſoner by the Poloneſe-Ruſſian party. On my return to Paris, I preſented memorials reſpecting the ſtate of things in the North, to the Miniſter for Foreign Affairs, in which

every day ſerved up to him a plate of ſomething gray-coloured, I could not tell what, and ſimilar, in form, to ſmall pebbles. He ate very heartily of this diſh, but never preſented it to any one at table; though his entertainments were always given in the moſt elegant ſtyle, and every other diſh indiſcriminately recommended to his gueſts, of whatever rank. He one day perceived me looking attentively at his favourite meſs; and aſked, with a ſmile, if I would pleaſe to taſte it. I accepted his offer, and found that it conſiſted of little balls of curdled milk, ſalted, and beſprinkled with aniſe-ſeeds, but ſo hard and ſo tough, that it coſt me inexpreſſible exertion to force my teeth through them, but to ſwallow them down, was abſolutely impoſſible.

"Theſe are," ſaid the Grand Maſter to me, "the cheeſes of my native country. It is a taſte "which I acquired in my boyiſh days. I was ac-"cuſtomed, when a child, to feed with the pea-

which I predicted the future partition of Poland, by the Powers contiguous. This partition actually took place ſome years afterward. I have ſince endeavoured to deſerve well of my country by my ſervices, both military, in the Weſt-Indies, in my capacity of Captain of the royal engineers, and literary, in France, and I add, with confidence, by my conduct likewiſe: but I have not, hitherto enjoyed the felicity of experiencing, in my fortune, that ſhe has been pleaſed graciouſly to accept the various ſacrifices which I ſaw it my duty to make to her.

ſants

"ſants on theſe coarſe milk beverages. When I "am travelling, and have got to a diſtance from "great towns, on coming near a country village, "I ſend on my ſervants and carriages before; "and then my great delight is to go unattended, "and carefully muffled up in my cloak, into the "houſe of the firſt peaſant on the road, and de-"vour an earthen pot-full of curdled milk, ſtuffed "full of brown bread. On my laſt journey into "Livonia, on one of theſe occaſions, I met with "an adventure, which amuſed me very highly. "While I was breakfaſting in this ſtyle, in comes "a man ſinging cheerly, and carrying a parcel on "his ſhoulder. He ſat down by me, and deſired "the landlord to give him a breakfaſt ſuch as "mine. I aſked this traveller ſo gay, whence he "came, and which way he was going. *I am a* "*ſailor*, ſays he, *and juſt arrived from a voyage to* "*India; I diſembarked at Riga, and am on my re-*"*turn to Herland, which is my native country, where* "*I have not been theſe three years. I ſhall ſtay* "*there till I have ſpent theſe hundred crowns*, pul-"ling out a leathern bag, and chinking the mo-"ney. I aſked him ſeveral queſtions about the "countries he had ſeen, which he anſwered very "pertinently. *But*, ſaid I to him, *what will you* "*do, when your hundred crowns are gone?—Oh!*" "ſays he, *I will return to Holland, embark again* "*for India, earn another bag of crowns, come back*

"*and enjoy myſelf in Herland, in Franconia, my na-*" "*tive country.*" The good humour and thought-" "leſſneſs of this fellow diverted me exceedingly," continued the Grand Maſter. "To confeſs the "truth, I envied his ſituation."

Wiſe Nature, in giving ſo much force to early habits, intended that our happineſs ſhould depend on thoſe, who are moſt concerned to promote it, that is, our parents; for on the affections which they, at that ſeaſon, inſpire, depends the affection which we are one day to be called upon to return. But, with us, as ſoon as the child is born, he is transferred to a mercenary nurſe. The firſt bond which Nature intended ſhould attach him to his parents, is burſt aſunder before it is formed. The day will come, perhaps, when he will behold the funeral proceſſion of thoſe who gave him birth, leave his father's door, with as much indifference as they ſaw his cradle turned out. He may be recalled home, it is true, at the age when the graces, when innocence, when the neceſſity of having an object of affection ſhould fix him there for ever. But he is permitted to taſte thoſe ſweets, only to make him feel, in a little while, the bitterneſs of having them taken away from him. He is ſent to ſchool; he is put to board far from home. There he is doomed to ſhed tears which no maternal hand is ever more to wipe away. It is there he is

to

to form friendſhips with ſtrangers, pregnant with regret and repentance; and there he muſt learn to extinguiſh the natural affections of brother, of ſiſter, of father, of mother, which are the moſt powerful, and the ſweeteſt chains by which Nature attaches us to our Country.

After this firſt horrid outrage committed on his young heart, others equally violent are offered to his underſtanding. His tender memory muſt be loaded with ablatives, with conjunctions, with conjugations. The bloſſom of human life is ſacrificed to the metaphyſical jargon of a dead language. What Frenchman could ſubmit to the torture of learning his own in that manner? And if there be thoſe who have exerciſed ſuch laborious patience, do they ſpeak better than perſons who have never endured ſuch drudgery? Who writes beſt, a lady of the Court, or a pedantic grammarian? *Montagne*, ſo repleniſhed with the ancient beauties of the Latin tongue, and who has given ſo much energy to our own, congratulates himſelf on *never having underſtood what the word vocative meant*. To learn to ſpeak by grammar rules, is the ſame thing with learning to walk by the laws of equilibrium. It is practice that teaches the grammar of a language, and the paſſions are our beſt inſtructors in the rhetoric of it. It is only at the age, and in places where they expand, that the

the beauties of *Virgil* and *Horace* are felt, a thing which our moſt celebrated college tranſlators never dreamt of.

I recollect that when I was at ſchool, I was for a long time ſtunned, as other boys are, by a chaos of barbarous terms; and that, when I happened to catch a glimpſe, in the Author I was ſtudying, of any ſtroke of genius which met my reaſon, or any ſentiment which made it's way to my heart, I kiſſed the book for joy. It filled me with aſtoniſhment to find that the Ancients had common ſenſe. I imagined that there muſt be as great a difference between their reaſon and mine, as there was in the conſtruction of our two languages. I have known ſeveral of my ſchool-fellows ſo diſguſted at Latin Authors, by thoſe college explanations, that, long after they had bidden farewel to the ſeminary, they could not bear to hear their names mentioned. But when they came to be formed by acquaintance with the world, and by the operation of the paſſions, they became perfectly ſenſible of their beauties, and reſorted to them as the moſt delightful of all companions. It is thus that children, with us, become ſtupified; and that an unnatural conſtraint is uſed to repreſs a period of life all fire and activity, transforming it into a ſtate, ſad, ſedentary, and ſpeculative, which has a diſmal influence on the temperament, by ingraft-

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ing maladies without number upon it. But theſe, after all, amount only to the production of languor, and phyſical evils. But they are trained to vice; they are decoyed into ambition under the guiſe of emulation.

Of the two paſſions which are the moving principles of the human heart, namely, love and ambition, the laſt is by far the moſt durable, and the moſt dangerous. Ambition is the laſt that dies in the aged, and our mode of education puts it prematurely in motion in the young. It would be infinitely better to aſſiſt them in directing their early tender affections toward an amiable object. Moſt are deſtined, one time or another, to feel the power of this gentle paſſion. Nature has, beſides, made it the firmeſt cement of Society. If their age, or, rather, if our financial manners forbid a commerce of early love, their young affections ought to be directed into the channel of friendſhip, and thus, as *Plato* propoſes in his Republic, and as *Pelopidas* effected at Thebes, batallions of friends might be formed among them, at all ſeaſons prepared to devote themſelves in the ſervice of their Country *.

But

* *Divide & impera* (divide and govern) is a ſaying, I believe, of *Machiavel*'s. Judge of the goodneſs of this maxim, from the miſerable

But ambition never riſes except at the expenſe of another. Give it whatever ſpecious name you pleaſe, it is ever the ſworn enemy of all virtue. It is the ſource of vices the moſt dangerous and deteſtable; of jealouſy, of hatred, of intolerance, and cruelty; for every one is diſpoſed to gratify it in his own way. It is forbidden to all men by Nature and Religion, and to the greateſt part of ſubjects by Government. In our colleges, a lad is brought up to empire, who muſt be doomed, for life, to ſell pepper. The young people, the hope of a great Nation, are there employed, for, at leaſt, ſeven years, in learning to be the firſt in the art of declamation, of verſification, of prat-

miſerable ſtate of the country which gave it birth, and where it has been reduced into practice.

Children, at Sparta, were taught only to obey, to love virtue, to love their country, and to live in the moſt intimate union, till they were divided in their ſchools into two claſſes, of *Lovers* and *Beloved*. Among the other Nations of Greece, education was arbitrary; it conſiſted of a great variety of exerciſes, of eloquence, of wreſtling, of running, of pythian, of olympic, of iſthmian prizes, &c. Theſe frivolities foſtered undue partialities. Lacedemon gave Law to them all: and while the firſt, on going to engage in the battles of their country, needed the ſtimulus of pay, of harangues, of trumpets, of clarions, to excite their courage, it was neceſſary, on the contrary, to repreſs the ardor of the Lacedemonians. They went to battle, unſtimulated by mercenary conſiderations, by eloquent addreſſes, to the ſound of the flute, and ſinging in one grand concert, the hymn of the two twin brothers, *Caſtor* and *Pollux*.

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tling. For one who ſucceeds in theſe trivial purſuits, how many thouſands loſe, at once, their health and their Latin!

It is emulation, we are told, which awakens talents. It would be an eaſy taſk to demonſtrate, that the moſt celebrated Writers, in every walk of literature, never were brought up at college, from *Homer*, who was acquainted with no language but his own, down to *John James Rouſſeau*, who was a very indifferent Latin ſcholar. How many young men have made a brilliant figure in the run of the claſſes, who were by and by totally eclipſed in the vaſt ſphere of Literature! Italy is crouded with colleges and academies; but can ſhe boaſt, at this day, of ſo much as one man eminently diſtinguiſhed? Do we not ſee there, on the contrary, talents diſtracted, by ill-aſſorted ſocieties, by jealouſies, by cabals, by intrigues, and by all the reſtleſsneſs of ambition, become enfeebled, and melt away?

I think I am able to perceive ſtill another reaſon of this decline; it is, that nothing is ſtudied in thoſe ſeminaries but the methods and forms of learning, or what, in the Painter's phraſe, is called *manner*. This ſtudy, by fixing us in the track of a maſter, forces us out of the path of Nature, which is the ſource of all talents. Look to France,

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and obſerve what are the arts brought there to the higheſt perfection; and you will find that they are thoſe for which there is no public ſchool, no prize, no academy: ſuch as milliners, jewellers, hair-dreſſers, cooks, &c. We have, it is true, men of high reputation in the liberal arts, and in the ſciences; bnt theſe men had acquired their talents before they were introduced into academies. Beſides, will any one venture to affirm, that they are equal to thoſe of preceding ages, who appeared before academies exiſted? After all, admitting that talents are formed in colleges, they would not for that be leſs prejudicial to the Nation; for it is of inconceivably more importance that a Country ſhould poſſeſs virtue rather than talents, and men happy, rather than men renowned. A treacherous glare covers the vices of thoſe who ſucceed in our Colleges. But in the multitude who never ſucceed, ſecret jealouſies, malicious whiſpers, mean flatteries, and all the vices of a negative ambition are already in a ſtate of fermentation, and ready to burſt forth, at the command of their leader, upon the World.

While depravity is thus taking poſſeſſion of the hearts of children, ſome branches of education go directly to the perverſion of their reaſon. Theſe two abuſes always walk hand in hand. Firſt, they are taught to deduce falſe conſequences. The

Regent

Regent informs them that *Jupiter*, *Mercury*, and *Apollo*, are gods: the Pariſh-miniſter tells them that they are demons. The profeſſor aſſures his pupil, that *Virgil*, who has ſo nobly ſupported the doctrine of a Providence, is got at leaſt to the Elyſian Fields, and that he enjoys in this world the eſteem of all good men: The Curé informs him, that this ſame *Virgil* was a pagan, and muſt certainly be damned. The Goſpel holds a contradictory language, in another reſpect; it recommends to the young man to be the laſt; his college urges him by all means to be the firſt: virtue commands him to deſcend; education bids him riſe. And what renders the contradiction ſtill more glaring to the poor lad, it frequently proceeds, eſpecially in the country, from one and the ſame mouth: for the ſame good Eccleſiaſtic, in many places, teaches the claſſics in the morning, and the catechiſm at night.

I can very eaſily conceive how the matter may be arranged, and contradictions reconciled, in the head of the Regent; but they muſt of neceſſity confound and perplex all the ideas of the Learner, who is not paid for comprehending, as the other is, for retailing them.

The caſe is much worſe, when ſubjects of terror are employed, where nothing ought to be adminiſtred

niſtred but conſolation: when application is made to them, for example, at the age of innocence, of the woes pronounced by JESUS CHRIST, againſt the Phariſees, the doctors, and the other tyrants of the Jewiſh nation; or when their tender organs are ſhocked by certain monſtrous images ſo common in our churches. I knew a young man who, in his infancy, was ſo terrified with the dragon of St. Marguerite, with which his preceptor had threatened him in the village-church, that he actually fell ſick of horror, believing that he ſaw the monſter conſtantly at his pillow, ready to devour him. His father, in order to quiet his diſturbed imagination, was under the neceſſity of appearing ſword in hand to attack the dragon, and of pretending that he had killed him. Thus, as our method is, one error was driven out by another. When grown up, the firſt uſe which he made of his reaſon was to reflect, that the perſons intruſted with the formation of that faculty, had impoſed upon him twice.

After having elevated a poor boy above his equals, by the title of Emperor, and even above the whole Human Race, by that of Son of the Church, he is cruelly brought low by rigorous and degrading puniſhments. "Among other things," ſays *Montagne* *, "that part of the police of moſt of our

* Eſſays, book i. chap. 25.

ſchools,

"ſchools has always given me much offence. "They ought, at all hazards, certainly with much "leſs diſadvantage, to have adopted the extreme "of indulgence. Youth immured preſents the "moſt horrid of all gaols. To puniſh a child be-"fore he is debauched, is an infallible method to "debauch him. If you happen to paſs when the "leſſon is delivering, you hear nothing but the "cries of poor children undergoing chaſtiſement, "and the ſtorming of maſters intoxicated with "rage. What a method to inſpire with the love "of learning, thoſe tender and timid ſpirits, to "drive them to it with ſurly looks, and birchen-"armed hand! Unjuſt, pernicious proceeding! "Add to this, what *Quintilian* has well remarked "on the ſubject, that this imperious authority is "pregnant with the moſt dangerous conſequences, "particularly from the mode of chaſtiſement. "How much more decent an appearance would "their claſſes exhibit, ſtrewed with flowers and "verdant boughs, than with the fragments of "bloody rods! I would have portrayed in them, "Joy, Gaiety, Flora, the Graces, as the Philoſo-"pher *Speuſyppus* had in his ſchool. Where ſhould "their improvement be looked for, but where "their pleaſure is * ?"

* *Michael Montagne* is, likewiſe, one of thoſe men who were not educated at college; the time of his continuance there, at leaſt,

I have ſeen, at college, many a pretty creature ready to fall into a ſwoon with pain, receive on their little hands, up to a dozen of ſharp ſtrokes. I have ſeen, by the infliction of this puniſhment, the ſkin ſeparated from the tip of their fingers, and the bare fleſh expoſed. What ſhall be ſaid of thoſe infamous puniſhments, which produce a diſgraceful effect, at once, on the morals of both ſcholars and regents, and of which a thouſand examples might be adduced? It is impoſſible to enter into any detail, on this ſubject, without putting modeſty to the bluſh. And yet they are employed by prieſts. They reſt on a paſſage from *Solomon*'s writings, of this import, "He that ſpareth the rod "hateth the child." But who knows whether the Jews themſelves practiſed corporal puniſhment after our faſhion? The Turks, who have retained a great part of their uſages, hold this in deteſtation. It has been diffuſed over Europe only by the corruption of the Greeks of the Lower Empire, and it was introduced there by the Monks. If the Jews actually employed it, who can tell but their

leaſt, was very ſhort. He was inſtructed without taſting corporal puniſhment, and without emulation, under the paternal roof, by the gentleſt of fathers, and by preceptors whoſe memory he has preciouſly embalmed in his writings. He became, by means of an education ſo diametrically oppoſite to ours, one of the beſt, and one of the moſt intelligent men of the Nation.

ferocity

ferocity might proceed from this part of their education?

Befides, there are in the Old Teftament many advices never intended for our ufe. We find in it paffages of very difficult explication, examples dangerous, and laws impracticable. In Leviticus, for example, the ufe of fwine's flefh is prohibited. It is reprefented as a crime worthy of death, to violate the Sabbath-day, by working upon it; that of killing an ox * without the camp is forbidden under a like punifhment, &c. St. *Paul*, in his Epiftle to the Galatians, fays pofitively, that the Law of *Mofes* is a Law of fervitude; he compares it to the flave *Hagar*, whom *Abraham* repudiated. Whatever refpect may be due to the Writings of *Solomon*, and to the Laws of *Mofes*, we are not their difciples, but the difciples of HIM, who faid, "fuffer little children to come to Me; "forbid them not;" who bleffed them, and faid that in order to enter into the kingdom of Heaven, we muft become like them.

Our children, fubverted by the vices of a faulty education, become falfe reafoners, knavifh, hypo-

* In what part of the Mofaic Inftitution, could our Author poffibly find this penal ftatute? It is, furely, unneceffary to give infidelity a groundlefs triumph. H. H.

 critical,

critical, envious, ugly, and wicked. In proportion as they increaſe in age, they increaſe alſo in malignity, and the ſpirit of contradiction. There is not a ſingle ſchool-boy who knows any thing of the laws of his Country, but there are ſome who may have heard talk about thoſe of the Twelve Tables. No one of them can tell how our own wars are conducted; but many are able to entertain you with ſome account of the wars of the Greeks and Romans. Not one of them but knows that ſingle combat is prohibited; and many of them go to the fencing-ſchools, where the only thing taught is to fight duels. They are ſent thither, we are told, merely to learn a graceful carriage, and to walk like gentlemen; as if a gentleman muſt walk in the poſitions of *tierce* and *quarte*, and as if the gait and attitude of a citizen ought to be that of a gladiator.

Others, deſtined to functions more peaceful, are put to ſchool to learn the art of diſputation. Truth, they gravely tell us, is ſtruck out of the colliſion of opinions. There may be ſomething like wit in the expreſſion. But for my own part, I ſhould find myſelf incapable of diſtinguiſhing truth, if I met with her in the heat of a diſpute. I ſhould ſuſpect that I was dazzled either by my own paſſion, or that of another man. Out of diſputations have ariſen ſophiſms, hereſies, paradoxes,

errors

errors of every kind. Truth never ſhews her face before tyrants; and every man who diſputes would be a tyrant if he could. The light of truth has no reſemblance to the fatal coruſcations of the thunder, produced by the claſhing of the elements, but to the brightneſs of the Sun, which is perfectly pure only when Heaven is without a cloud.

I ſhall not follow our youth into the World, where the greateſt merit of ancient times could be of no manner of ſervice to him. What ſhould he make of his magnanimous republican ſentiments under a deſpotiſm; and of thoſe of diſintereſtedneſs in a country where every thing is bought and ſold? What uſe could he make even of the impaſſible philoſophy of a *Diogenes*, in cities where beggars are taken up, and ſent to the houſe of correction? Youth would be ſufficiently unhappy, even ſuppoſing it to have preſerved only that fear of blame, and that deſire of commendation, under which it's ſtudies were conducted. Influenced from firſt to laſt by the opinion of another, and having in itſelf no ſteady principle, the ſillieſt of women will rule over him with more unbounded empire than his profeſſor. But, let us ſay what we will, the colleges will be always full. All I pretend to plead for is, that children ſhould be delivered, at leaſt, from that tedious apprenticeſhip to miſery, by which they are depraved, at the

happieſt

happieſt and moſt amiable period of their exiſtence, and which has afterward ſo much influence on their characters. Man is born good. It is ſociety that renders him wicked; and our mode of education prepares the way for it.

As my teſtimony is not of ſufficient weight to bear out an aſſertion of ſo much importance, I ſhall produce ſeveral which are not liable to ſuſpicion, and which I ſhall extract at random from the Writings of Eccleſiaſtics, not in conformity to their opinions, which are dictated by their condition, but reſulting from their perſonal experience, which, in this reſpect, abſolutely deranges their whole theory.

Here is one from Father *Claude d'Abbeville*, a Capuchin Miſſionary, on the ſubject of the children of the inhabitants of the Iſland of Maragnan, on the coaſt of Braſil; where we had laid the foundations of a colony, whoſe fate has been ſimilar to that of ſo many others, which have been loſt by our want of perſeverance, and by our unhappy diviſions, the uſual and natural conſequence of injudicious education. "Farther, I know not "whether it be from the ſingular affection which "fathers and mothers here bear to their children, "but certain it is, they never ſay a word which "can poſſibly give them the ſlighteſt uneaſineſs; "they

" they are left at perfect liberty to do just what " they please, and to take their own way in every " case, without any apprehension of reproof what- " ever. It is, accordingly, a most astonishing ap- " pearance, and what has often excited admira- " tion in myself, and many others," (and with good reason) " the children hardly ever do any " thing that can displease their parents; on the " contrary, they are at pains to do every thing " which they know, or imagine, will be agree- " able to them *." He afterwards presents a very favorable portrait of their physical and moral qualities.

His testimony is confirmed by *John de Lery*, as far as it respects the Brasilians, whose manners are the same, and who are in the near neighbourhood of that island. I beg leave to produce another, that of *Anthony Biet*, Superior of the Missionary Priests, who, in the year 1652, went over to Cayenne, another colony lost to us from the same causes, and since indifferently settled. It is on the subject of the children of the Galibis Savages †.

* History of the mission of Capuchin Fathers to the Island of Maragnan, chap. xlvii.

† Voyage to the Equinoctial Countries, book iii. page 390.

 " The

" The mother takes great delight in nurſing her " child. There is no ſuch thing known among " them as giving out their children to be nurſed " by a ſtranger. They are fond of their children " to exceſs. They bathe them regularly every " day in a fountain or river. They do not ſwaddle " them, but put them to ſleep in a little bed of " cotton, made expreſsly for the purpoſe. They " always leave them quite naked: their progreſs " in growth is perfectly wonderful; ſome are able " to walk alone at the age of eight or nine months. " When grown to a certain age, if they are inca- " pable of walking upright, they march along on " their hands and feet. Thoſe people love their " children to diſtraction. They never chide nor " beat them, but permit them to enjoy perfect li- " berty; which they never abuſe by doing any " thing to vex their parents. They expreſs great " aſtoniſhment, when they ſee any of our people " correct their children."

Here is a third, extracted from the work of a Jeſuit, I mean Father *Charlevoix*, a man of various and extenſive learning. It is a paſſage from his Voyage to New Orleans, another colony which we have ſuffered to fall to nothing, through our diviſions, a conſequence of our moral conſtitution, and of our ſyſtem of education. He is ſpeaking, in general,

general, of the children of the Savages of North-America.

"Sometimes, * as the means of correcting their "faults, they employ prayers and tears, but never "threatenings....A mother, who ſees her daughter "behave improperly, falls a crying. The daughter "naturally aſks what is the matter with her, and "ſhe ſatisfies herſelf with replying, *You diſhonour* "*me.* This mode of reproof ſeldom fails to pro-"duce the effect intended. Since, however, they "have had a little more commerce with the "French, ſome of them begin to chaſtiſe their "children; but ſcarcely any except among thoſe "who are *Chriſtians*, or who are fixed in the co-"lony. The ſevereſt puniſhment uſually inflicted "by the Savages, for correcting their children, is "to throw a little water in their face.....Young "women have been known to hang themſelves, "for having received from a mother ſome ſlight "reprimand, or a few drops of water thrown in "the face; after giving warning of what they were "going to do, in theſe words, *You ſhall no longer* "*have a daughter.*"

It is very amuſing, to obſerve the embarraſſment of this Author, in attempting to recon-

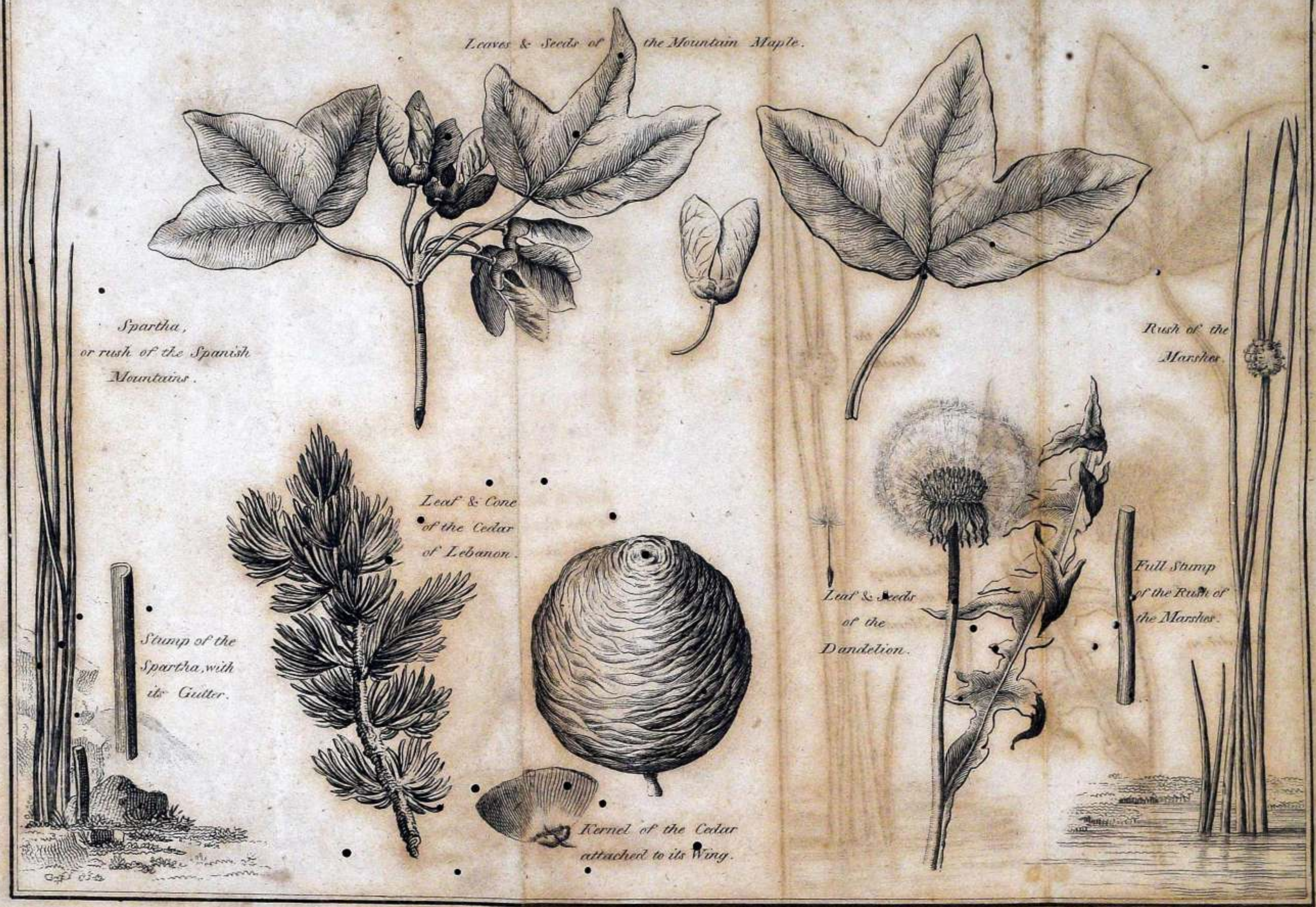
* Hiſtorical Journal of North-America. Lett. xxiii. Aug. 1721.

cile

cile his European prejudices with his remarks as a traveller; which produces perpetual contradictions in the courſe of his Work. "It would "ſeem," ſays he, "that a childhood ſo badly "diſciplined, muſt be ſucceeded by a very turbu-"lent and very corrupted youth." He admits that reaſon directs thoſe people earlier than it does other men; but he aſcribes the cauſe of it to their temperament, which is, as he alleges, more tranquil. He recollects not the pathetic repreſentations which he himſelf has exhibited of the ſcenes that their paſſions preſent, when they expand and exalt themſelves in the boſom of peace, in their national aſſemblies, where their harangues leave all the art of our Orators far behind, as to juſtneſs and ſublimity of imagery; or amidſt the fury of war, where they brave, in the face of fire and faggots, all the rage of their enemies. He does not chooſe to ſee, that it is our European education which deſtroys our temper, for he acknowledges, in another place, that theſe ſame Savages, brought up after our manner, become more wicked than others. There are paſſages in his Work, in which he preſents the moſt affecting elogium of their morality, of their amiable qualities, and of their happy life. He ſometimes ſeems to envy their condition.

Time

LEAVES WITH AN AQUEDUCT, AND VOLATILE FRUITS OF MOUNTAIN VEGETABLES.



Time permits me not to give at large thoſe different paſſages that may be read in the Book from which the above extract is made, nor to produce a multitude of other teſtimonies, reſpecting the different Nations of Aſia, which demonſtrate the perceptible influence that gentleneſs of education has on the phyſical and moral beauty of mankind, and which muſt be, in every political conſtitution, the moſt powerful bond of union among the members of the State.

I ſhall conclude theſe foreign authorities by a touch which good *John James Rouſſeau* could not have given with impunity, and which is extracted word for word from the work of a Dominican; I mean the agreeable Hiſtory of the Antilles, by Father *du Tertre*, a man replete with taſte, with good ſenſe, and humanity. Hear what he ſays of the Caraïbs, whoſe education reſembles that of the Nations which I have been deſcribing *.

" On mentioning the word Savage," ſays he, " moſt people will figure to themſelves a ſpecies of " men, barbarous, cruel, inhuman, deſtitute of " reaſon, deformed, tall as giants, hairy like bears; " in a word, rather monſters than rational beings;

* Natural Hiſtory of the Antilles, vol. ii. treatiſe vii. chap. 1. ſect. 1.

" though

" though, in truth, our Savages are ſuch only in " name, juſt as the plants and the fruits which " Nature produces without culture in foreſts and " deſerts; for theſe too we denominate wild or " ſavage, though they poſſeſs the real virtues and " properties in their native force and vigor, which " we frequently corrupt by art, and cauſe to de- " generate by tranſplantation into our gardens..... " It is of importance," adds he afterwards, " to " demonſtrate in this treatiſe, that the Savages in " theſe iſlands, are the moſt content, the happieſt, " *the leaſt vicious*, the moſt ſociable, the leaſt de- " formed, and the leaſt tormented by diſeaſe of " any people in the world."

If we trace among ourſelves the hiſtory of a villain's life, we ſhall find that his infancy was always very miſerable. Wherever I have found children unhappy, I always obſerved they were wicked and ugly; and wherever I ſaw them happy, there likewiſe they were beautiful and good. In Holland and Flanders, where they are brought up with the greateſt gentleneſs, their beauty is ſingularly remarkable. It is from them that the famous ſculptor, *Francis* the Flemiſh, borrowed his charming models of children; and *Rubens* that freſhneſs of colouring which glows on thoſe of his pictures. You never hear them, as in our cities, uttering loud and bitter cries; ſtill leſs do you hear them threatened

threatened with the rod by their mothers and nurſes, as with us. They are not gay, but they are contented. You obſerve on their countenance an air of tranquility and ſatisfaction which is perfectly enchanting, and infinitely more intereſting than the boiſterous mirth of our young people when they are no longer under the eye of their fathers or preceptors.

This calmneſs is diffuſed over all their actions, and is the ſource of a happy compoſure which characterizes their whole future life. I never ſaw any country where parental tenderneſs was ſo ſtrikingly expreſſed. The children, in their turn, repay them, in their old-age, the indulgence with which they were treated in helpleſs infancy. By bonds ſo endearing are theſe people attached to their country, and ſo powerfully that we find very few of them ſettling among ſtrangers. With us, on the contrary, fathers like better to ſee their children ſprightly than good, becauſe in a conſtitution of ambitious ſociety, ſpirit raiſes a man to the head of a party, but goodneſs makes dupes. They have collections of epigrams compoſed by their children; but wit being only the perception of the relations of ſociety, children ſcarcely ever have any but what is borrowed. Wit itſelf is frequently, in them, the proof of a miſerable exiſtence, as may be remarked in the ſchool-boys of our cities, who uſually are ſpright-

lier

lier than the children of the peaſantry; and in ſuch as labour under ſome natural defect, as lameneſs, hunch-backedneſs, and the like, who, in reſpect of wit, are ſtill more premature than others. But, in general, they are all exceedingly forward in point of feeling; and this reflects great blame on thoſe who degrade them, at an age when they frequently feel more delicately than men.

Of this I ſhall produce ſome inſtances, calculated to demonſtrate that, notwithſtanding the defects of our political conſtitutions, there ſtill exiſt, in ſome families, good natural qualities, or well-informed virtues, which leave, to the happy affections of children, the liberty of expanding.

I was at Dreſden, in 1765, and happened to go to the Court-Theatre: the piece performed was *The Father*. In came the Electreſs, with one of her daughters, who might be about five or ſix years of age. An officer of the Saxon guards, who had introduced me, ſaid in a whiſper, "That child will "intereſt you much more than the play." In fact, as ſoon as ſhe had taken her ſeat, ſhe reſted both hands on the front of the box, fixed her eyes on the ſtage, and remained, with open mouth, immoveably attentive to the performers. It was a truly affecting exhibition; her face, like a mirror, reflected all the different paſſions which the drama

was

was intended to excite. You could ſee, in ſucceſſion, depicted upon it, anxiety, ſurprize, melancholy, ſorrow; at laſt, as the intereſt increaſed from ſcene to ſcene, the tears began to trickle copiouſly down her little cheeks; accompanied with ſhivering, ſighing, ſobbing: till it became neceſſary at length to carry her out of the box, for fear of her being ſtifled. My companion informed me, that as often as this young princeſs attended the repreſentation of a pathetic piece, ſhe was obliged to retire, before it came to the criſis.

I have witneſſed inſtances of ſenſibility ſtill more affecting, in the children of the common people, becauſe they were not produced by any theatrical effect. As I was taking my walk, ſome years ago, through the Pré St. Gervais, about the ſetting-in of winter, I obſerved a poor woman, lying along the ground, employed in weeding a bed of ſorrel; cloſe by her was a little girl, of ſix years old at moſt, ſtanding, motionleſs, and quite impurpled with the cold. I addreſſed myſelf to the woman, who betrayed evident ſymptoms of indiſpoſition, and enquired into the nature of her malady. "Sir," ſaid ſhe to me, "for three months paſt, I have ſuf-"fered very ſeverely from the rheumatiſm; but "my diſeaſe gives me much leſs pain than that "poor child: ſhe will not quit me a ſingle mo-"ment. If I ſay to her, ſee, you are quite be-

"numbed

"numbed with cold, go within doors and warm "yourself; she replies: alas! mother, if I leave "you, your complaints will be your only com-"panion."

Another time, being at Marly, I went into that magnificent park, and amused myself in the woods with looking at the charming group of children who are feeding, with vine boughs and grapes, a she-goat which seems at play with them. At no great distance is an inclosed pavilion, where *Louis* XV. in fine weather, sometimes went to enjoy a collation. Being caught in a sudden shower, I went in for a few moments to shelter myself. I there found three children, who interested me much more than the children in marble without doors. They were two little girls, uncommonly handsome, employed with singular activity, in picking up, round the arbour, the scattered sticks of dry wood, which they deposited in a basket that stood on the King's table, while a little boy, all in tatters, and extremely lean, was devouring a morsel of bread in a corner. I asked the tallest, who might be about eight or nine years old, what she intended to do with that wood, which she was so busily collecting. She replied, "Look, Sir, at "that poor boy, there; he is very miserable! He "is so unfortunate as to have a step-mother, who "sends him out, all day long, to pick up wood: if

"if he carries none home, he is beaten ſeverely; "when he happens to have got a little, and is car- "rying it off, the Swiſs at the park-gate takes it "from him, and applies it to his own uſe. He is "half dead with hunger, and we have given him "our breakfaſt." Having thus ſpoken, ſhe and her companion filled the little baſket; helped him up with it on his back, and run away before their unhappy friend to the gate of the park, to ſee if he could paſs unmoleſted.

Fooliſh Inſtructors! Human nature, you tell us, is corrupted: yes, but you are the perſons who corrupt it by contradictions, by unprofitable ſtudies, by dangerous ambition, by ſhameful chaſtiſements: and by an equitable re-action of divine Juſtice, that feeble and unfortunate generation will one day give back to that which oppreſſes it, in jealouſies, in diſputes, in apathies, and in oppoſitions of taſtes, of modes, and of opinions, all the miſchief which it firſt received.

I have explained, to the beſt of my ability, the cauſes, and the re-actions of our evils, in the view of vindicating Nature from the charge of having produced them. I propoſe, at the cloſe of this Work, to exhibit the palliatives and the remedies. They will, no doubt, prove vain and inefficient ſpeculations: but if ſome Miniſter ſhall have the

 courage,

courage, one day, to undertake to render the Nation internally happy, and powerful abroad, I can venture to predićt, that this will be effećted neither by plans of economy, nor by political alliances, but by reforming it's manners, and it's plan of education. He never will make good this revolution, by means of puniſhments and rewards, but by imitating the proceſſes of Nature, who always carries her point by re-aćtion. It is not to the apparent evil that the remedy muſt be applied, but to it's cauſe. The cauſe of the moral power of gold, is in the venality of public offices; that of the exceſſive ſuperabundance of indolent tradeſmen in our cities, is in the impoſts which degrade the inhabitants of the country; that of the beggary of the poor, is in the overgrown property of the rich; that of the proſtitution of young women, is in the celibacy of the men; that of the prejudices of the Nobility, in the reſentments of the vulgar; and that of all the evils of ſociety, in the torments inflićted on children.

For my own part, I have ſpoken out; and if I could have ſpoken to the Nation in one vaſt aſſembly, from ſome point of the Horizon where Paris is diſcernible, I would have pointed out to my Country, on the one part, the monuments of the rich; the thouſands of voluptuous palaces in the ſuburbs, eleven theatres, the ſteeples of a

hundred

hundred and thirty-four convents, among which arife eleven wealthy abbeys; thofe of a hundred and fixty other churches, twenty of which are richly endowed chapters: and, on the other part, I would have pointed out the monuments of the wretched; fifty-feven colleges, fixteen courts of juftice, fourteen barracks, thirty guard-houfes, twenty-fix hofpitals, twelve prifons or houfes of correction. I would have difplayed the magnificence of the gardens, of the courts, of the greens, of the inclofures, and of the dependencies, of all thefe vaft edifices, accumulated on a fpace of ground lefs than a league and a half in diameter. I would have demanded, whether the reft of the Kingdom is diftributed in the fame proportion as the Capital: where are the properties of thofe who fupply it with food, with clothing, with the means of lodging, of thofe who defend it; and what, at laft, is left for the multitude, to maintain citizens, fathers of families, and happy men? Oh! ye moral and political Powers, after having fhewn you the caufes and the effects of our evils, I would have proftrated myfelf at your feet, and would have expected, as the reward of truth, the fame recompenfe which the peafant of the Danube expected from the infatiable powers of Rome *.

* As a fequel to this Study, may be read that which terminates the fourth Volume of this Work.

STUDY EIGHTH.

REPLIES

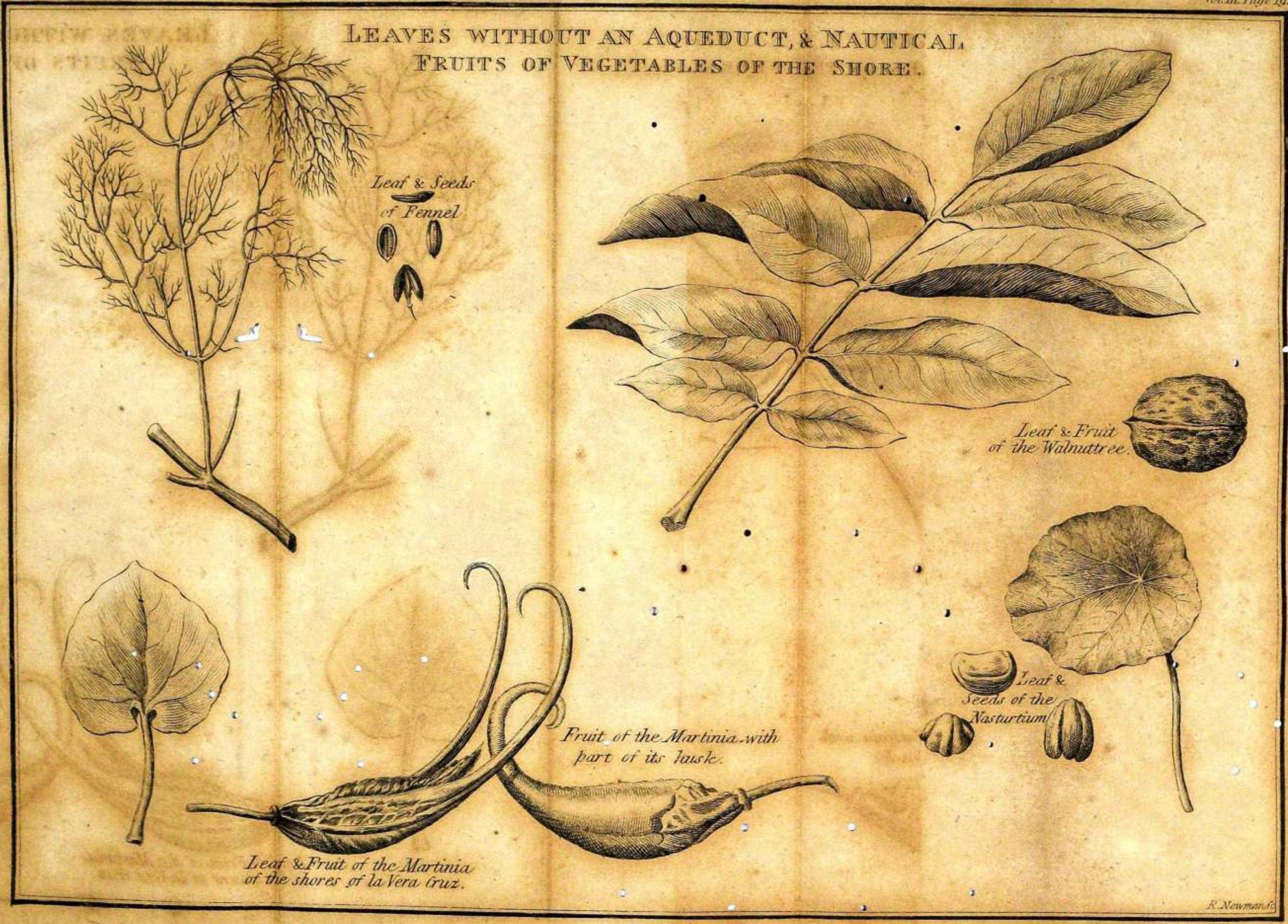
TO THE OBJECTIONS AGAINST A DIVINE PROVIDENCE, AND THE HOPES OF A LIFE TO COME, FOUNDED ON THE INCOMPREHENSIBLE NATURE OF GOD, AND THE MISERIES OF A PRESENT STATE.

"WHAT avails it me," ſome one will ſay, "that my tyrants are puniſhed, if I "am ſtill to be the victim of tyranny? Is it poſ-"ſible that ſuch compenſations ſhould be the "work of GOD? Great Philoſophers, who have "devoted their whole life to the ſtudy of Nature, "have refuſed to acknowledge it's Author. Who "hath ſeen GOD at any time? What is it that "conſtitutes GOD? But taking it for granted "that an intelligent Being directs the affairs of "this Univerſe, Man aſſuredly is abandoned to "himſelf: no hand has traced his career: as far "as he is concerned, there are, apparently, two "Deities; the one inviting him to unbounded "enjoyment, and the other dooming him to end-

" leſs privation; one God of Nature, and another " God of Religion. He is totally uncertain whe- " ther of the two he is bound to pleaſe; and " whatever be the choice which he is determined to " make, how can he tell whether he is rendering " himſelf an object of love or of hatred?

" His virtue itſelf fills him with doubts and " ſcruples; it renders him miſerable, both in- " wardly and outwardly; it reduces him to a ſtate " of perpetual warfare with himſelf, and with the " world, to the intereſts of which he is obliged " to make a ſacrifice of himſelf. If he is chaſte, " the world calls him impotent; if he is religious, " he is accounted ſilly; if he diſcovers benignity " of diſpoſition to thoſe around him, it is becauſe " he wants courage; if he devotes himſelf for the " good of his country, he is a fanatic; if he is " ſimple, he is duped; if he is modeſt, he is ſup- " planted; he is every where derided, betrayed, " deſpiſed, now by the philoſopher, and now by " the devotee. On what foundation can he build " the hope of a recompenſe for ſo many ſtruggles " and mortifications? On a life to come? What " aſſurance has he of it's exiſtence? Where is the " traveller that ever returned from thence?

" What is the ſoul of man? Where was it a " hundred years ago? Where will it be a century " hence?


LEAVES WITHOUT AN AQUEDUCT, & NAUTICAL
FRUITS OF VEGETABLES OF THE SHORE.
Leaf & Seeds of Fennel
Leaf & Fruit of the Walnuttree.
Leaf & Seeds of the Nasturtium
Fruit of the Martinia with part of its husk.
Leaf & Fruit of the Martinia of the shores of la Vera Cruz.
R. Newman sc.

" hence? It expands with the ſenſes, and expires " when they expire. What becomes of it in ſleep, " in a lethargy? It is the illuſion of pride to ima- " gine that it is immortal: Nature univerſally " points to death, in his monuments, in his appe- " tites, in his loves, in his friendſhips: man is " univerſally reduced to the neceſſity of drawing " a veil over this idea. In order to live leſs mi- " ſerable, he ought to *divert* himſelf, that is, as " the word literally imports, he ought to *turn aſide* " from that diſmal perſpective of woes which Na- " ture is preſenting to him on every ſide. To what " hopeleſs labours has ſhe not ſubjected his miſe- " rable life? The beaſts of the field are a thou- " ſand times happier; clothed, lodged, fed by the " hand of Nature, they give themſelves up with- " out ſolicitude to the indulgence of their paſ- " ſions, and finiſh their career without any pre-ſen- " timent of death, and without any fear of an " hereafter.

" If there be a GOD who preſides over the deſ- " tiny of all, he muſt be inimical to the felicity of " the Human Race. What is it to me that the " Earth is clothed with vegetables, if I have not the " ſhade of a ſingle tree at my diſpoſal? Of what " importance are to me the laws of harmony and " of love, which govern Nature, if I behold " around me only objects faithleſs and deceiving;

"or if my fortune, my condition, my religion, "impose celibacy upon me? The general felicity "diffused over the Earth, serves only as a bitter "aggravation of my particular wretchedness. "What interest is it possible for me to take in the "wisdom of an arrangement which renovates all "things, if, as a consequence of that very arrange-"ment, I feel myself sinking, and ready to be lost "for ever? One single wretch might arraign Pro-"vidence, and say with *Job*, the Arabian: * "*Wherefore is light given to him that is in misery*; "*and life unto the bitter in soul?* Alas! The ap-"pearances of happiness have been disclosed to "the view of Man, only to overwhelm him with "despair of ever attaining it. If a GOD, intelli-"gent and beneficent, governs Nature, diabolical "spirits direct and confound, at least the affairs "of the children of men."

I shall, first, reply to the principal authorities, on which some of those objections are supported. They are extracted, in part, from a celebrated Poet, and a learned Philosopher, namely *Lucretius*, and from *Pliny*.

Lucretius has clothed the Philosophy of *Empedocles* and *Epicurus* in very beautiful verses. His

* Job, chap. iii. ver. 20.

imagery

imagery is enchanting; but that Philoſophy of atoms, which adhere to each other by chance, is ſo completely abſurd, that wherever it appears, the beauty of the poetry is impaired. For the truth of this, I confidently refer to the judgment of his partiſans themſelves. It ſpeaks neither to the heart nor to the underſtanding. It offends equally in it's principles, and in the conſequences deduced from them. To what, we may aſk him, do thoſe primary atoms, out of which you conſtruct the elements of Nature, owe their exiſtence? Who communicated to them the firſt movement? How is it poſſible they ſhould have given to the aggregation of a great number of bodies, a ſpirit of life, a ſenſibility, and a will, which they themſelves poſſeſſed not?

If you believe, with *Leibnitz*, that thoſe *monads*, or unities, have, in truth, perceptions peculiar to themſelves, you give up the laws of chance, and are reduced to the neceſſity of allowing to the elements of nature, the intelligence which you refuſe to it's AUTHOR. *Deſcartes* has, in truth, ſubjected thoſe impalpable principles, and, if I may be allowed the expreſſion, that metaphyſical duſt, to the laws of an ingenious Geometry; and after him, the herd of Philoſophers, ſeduced by the facility of erecting all ſorts of ſyſtems with the ſame materials, have applied to them, by turns, the laws of

attraction,

attraction, of fermentation, of cryſtallization; in a word, all the operations of Chemiſtry, and all the ſubtilities of dialectics: but all, with equal ſucceſs, that is, with none whatever. We ſhall demonſtrate, in the article which follows this, when we come to ſpeak of the weakneſs of Human Reaſon, that the method adopted in our Schools, of riſing up to firſt cauſes, is the perpetual ſource of the errors of our Philoſophy, in phyſics as well as in morals. Fundamental truths reſemble the ſtars, and our reaſon is like the graphometer. If this inſtrument, conſtructed for the purpoſe of obſerving the heavenly bodies, has been deranged however ſlightly; if from the point of departure, we commit a miſtake of the minuteſt angle imaginable, the error, at the extremity of the viſual rays, becomes abſolutely incommenſurable.

There is ſomething ſtill more ſtrange, in the method which *Lucretius* has thought proper to purſue: namely that, in a Work, the profeſſed object of which is to materialize the Deity, he ſets out with deifying matter. In this he has himſelf given way to an univerſal principle, which we ſhall endeavour to unfold, when we come to adduce the proofs of the Divinity from feeling; it is this, that we find it impoſſible powerfully to intereſt mankind, whatever be the object, without preſenting to the Mind, ſome of the attributes of Deity.

Before

Before he attempts, therefore, to dazzle the underſtanding, as a Philoſopher, he begins with ſetting the heart on fire, as a Poet. Here is a part of his exordium.

..........Hominum divûmque voluptas,
Alma *Venus*, cœli ſubter labentia ſigna
Quæ mare navigerum, quæ terras frugiferentes
Concelebras, per te quoniam genus omne animantûm
Concipitur, viſitque exortum lumina ſolis,
Te dea, te fugiunt venti, te nubila cœli,
Adventuque tuo, tibi ſuaves dædala tellus
Submittit flores, tibi rident æquora ponti,
Placatumque nitet diffuſo lumine cœlum.
. . . .
Quæ quoniam rerum naturam ſola gubernas,
Nec, ſine te, quidquam dias in luminis oras
Exoritur, neque ſit lætum, neque amabile quidquam,
Te ſociam ſtudeo ſcribendis verſibus eſſe,
Quos ego de rerum naturâ pangere conor.
. . . .
Quo magis æternum, da dictis, diva, leporem.
Effice ut in terrâ fera munera militiaï
Per maria ac terras omnes ſopita quieſcant;
Nam tu ſola potes tranquillâ pace juvare
Mortales, quoniam belli fera munera Mavors.
Armipotens regit, in gremium qui ſæpe tuum ſe
Rejicit, æterne devictus vulnere amoris.
. . . .
Hunc, tu diva, tuo recubantem corpore ſancto
Circumfuſa ſuper, ſuaves ex ore loquelas
Funde, petens placidam Romanis, inclyta pacem:
Nam neque nos agere, hoc patriaï tempore iniquo,
Poſſumus æquo animo.

De Rerum Naturâ, lib. 1.

I ſhall

I ſhall endeavour, as well as I can, to give a plain proſe tranſlation of thoſe beautiful verſes.

"—— Delight of men and gods, gracious "*Venus!* who preſideſt over the ſail-bearing "Ocean, and the fertile Earth, while the hoſts "of Heaven glide majeſtically ſilent around; "ſince by thy prolific virtue, the whole animal "creation teems with life, and turns the opening "eye-ball to the light of the Sun; at thy ap-"proach, O Goddeſs, the winds are huſhed, the "vapours that obſcure the face of the ſky diſ-"perſe, the variegated ground ſpreads a carpet "of enamelled flowers underneath thy feet; the "waters of the deep ſmile with joy, and the placid "ſky is overſpread with a milder light......Seeing, "then, that thou reigneſt, ſole Empreſs of Na-"ture; ſince without thee no living creature "ariſes into day, or poſſeſſes the capacity of re-"ceiving or communicating delight, how gladly "would I aſſume thee as my aſſociate in the ar-"duous undertaking on which I now enter—an "enquiry into the nature of things.....Give, then, "O Goddeſs, ſomewhat of thy unfading grace to "my ſtrains. And grant, meanwhile, that the "din of battle may ceaſe over every land, over "every ſea: for with thee it reſts to reduce the "troubled world to peace; ſince *Mars*, all-power-"ful in arms, directs the thunder of war; who

"frequently

" frequently retires well-pleaſed from the enſan-
" guined plain, to ſolace himſelf in the ſoft dalli-
" ance of thy uncloying love....In thoſe fond mo-
" ments, when affection can deny nothing, intreat
" him to have compaſſion on his own Rome and
" thine, and beſtow on it laſting tranquillity; for
" how can the voice of the philoſophic Muſe be
" heard amidſt the confuſed noiſe of civil diſ-
" cord?"*

Lucretius

* Mr. *Creech* and Mr. *Dryden* have both tranſlated this paſſage of *Lucretius*. It would have ſaved me a little labour, had I dared to tranſcribe from either of their poetical verſions. But, every thing conſidered, I have ventured rather to hazard one of my own. If it ſhall be deemed deficient in poetical merit, two qualities, at leaſt, it poſſeſſes; it conveys enough of the ſenſe of the Original, to anſwer the purpoſe of it's being quoted in this Work, and it cannot poſſibly give offence to any modeſt ear.

VENUS, all hail! of Gods and men the pride;
Mov'd by whoſe pow'r, the heav'nly bodies glide,
In myſtic round; thine is the teeming Earth,
To thee the ſwelling Ocean owes his birth:
Source of all life! thou breath'ſt the living ſoul,
And kindleſt joy " from Indus to the Pole."
At thy approach the noiſy tempeſts ceaſe,
The air grows pure, and all the World is peace;
For thee the SPRING her flow'ry mantle weaves,
For thee AUTUMNUS piles his golden ſheaves:

The

Lucretius is, in truth, conftrained to admit, in the fequel of his Poem, that this goddefs, fo wonderfully beneficent, is directly chargeable with the ruin of health, of fortune, of parts, and, fooner or later, with the lofs of reputation: that, from the very lap of the pleafures which fhe beftows, there iffues a fomething which embitters enjoyment, which torments a man, and renders him mi-

* The placid Deep reflects a clearer ray,
And Sol emits through Heaven a brighter day.
. . . .
Since, Goddefs, thus all own thy fov'reign pow'r;
Since, without thee, none fees the natal hour;
Without thee nought of fair, of fweet, is feen,
Delight of Nature! Univerfal Queen!
Vifit thy bard with fome celeftial dream;
Be thou, my Mufe, for Nature is my theme.
. . . .
Around my lays thy winning graces fhed,
So fhall immortal honours crown my head.
  Meanwhile, command a troubled world to reft.
Bid the fierce foldier calm his angry breaft.
Let Sea and Land thy genial influence feel;
Let placid Nations at thine altar kneel.
Befmear'd with blood, and fick of war's alarms,
Soothe back fierce Mars to thy all-conq'ring arms:
Tell him how Rome now bleeds at every vein;
Let thy fweet voice reftore the gentle reign,
Of golden Saturn. Bid the trumpet ceafe,
Let all in Rome; and all the World be peace.

H. H.

ferable.

ſerable. The unfortunate Bard himſelf fell a victim to this, for he died in the very prime of life, either from exceſſive indulgence, according to ſome, or poiſoned, according to others, by an amorous potion adminiſtred by the hand of a woman.

In the paſſage above quoted, he aſcribes to *Venus* the creation of the world; he addreſſes prayers to her; he beſtows on her perſon the epithet of ſacred; he inveſts her with a character of goodneſs, of juſtice, of intelligence, and of power, which belongs to GOD only; in a word, the attributes are ſo exactly the ſame, that, ſuppreſſing only the word *Venus*, in the invocation of his Poem, you may apply it almoſt entirely to the Divine Wiſdom. There are even points of reſemblance, ſo ſtriking, to the repreſentation given of it in the Book of Eccleſiaſticus, that I cannot refrain from exhibiting the counterpart, that the Reader may have it in his power to make the compariſon.

Eccleſiaſt. chap. xxiv.

Vulgate Latin Verſion.	*Common Engliſh Verſion.*
3, 4, 5. Ego ex ore Altiſſimi prodivi, primogenita ante omnem creaturam; ego feci in cœlis ut oriritur lumen indeficiens,	3 I came out of the mouth of the Moſt High, and covered the earth as a cloud. 4. I dwelt in high places, and

ciens, & ſicut nebula texi omnem terram. Ego in altiſſimis habitavi, & thronus meus in columnâ nubis.

and my throne is in a cloudy pillar.

5. I alone compaſſed the circuit of Heaven; and walked in the bottom of the Deep.

6, 7, 8, 9. Gyrum cœli circuivi ſola, & profundum abyſſi penetravi; in fluctibus ambulavi, & in omni terrâ ſteti & in omni populo; & in omni populo primatum habui. Et omnium excellentium & humilium corda virtute calcavi, & in his omnibus requiem quaſivi, & in hæreditate domini morabor.

6. In the waves of the ſea, and in all the earth, and in every people and nation, I got a poſſeſſion.

7. With all theſe I ſought reſt: and in whoſe inheritance ſhall I abide?

— — — — — — — — — — — — —

13. Quaſi cedrus exaltata ſum in Libano, & quaſi cypreſſus in Monte Sion.

13. I was exalted like a cedar in Libanus, and as a cypreſs-tree upon the mountains of Hermon.

14. Quaſi palma exaltata ſum in Cades, & quaſi plantatio roſæ in Jericho. Quaſi oliva ſpecioſa in campis, & quaſi platanus exaltata ſum juxta aquam in plateis.

14. I was exalted like a palm-tree in Engaddi, and as a roſe-plant in Jericho, as a fair olive-tree in a pleaſant field, and grew up as a plane-tree by the water.

— — — — — — — — — — — — —

16. Ego quaſi terebinthus extendi ramos meos, & rami mei honoris & gratiæ.

16. As the turpentine tree, I ſtretched out my branches, and my branches are the branches of honour and grace.

17. Ego quaſi vitis fructificavi ſuavitatem odoris, et flores mei fructus honoris & honeſtatis.

17. As the vine brought I forth pleaſant ſavour, and my flowers are the fruit of honour and riches.

18. Ego

18. I am

18. Ego mater pulchræ dilectionis, & timoris, & agnitionis, & ſanctæ ſpei. In me gratia omnis viæ & veritatis, in me omnis ſpes vitæ & virtutis.

18. I am the mother of fair love, and fear, and knowledge, and holy hope: I therefore being eternal, am given to all my children which are named of him.

19. Tranſite ad me, omnes qui concupiſcitis me, & generationibus meis implemini.

19. Come unto me, all ye that be deſirous of me, and fill yourſelves with my fruits.

20. Spiritus enim meus ſuper mel dulce, & hæreditas mea ſuper mel & favum.

20. For my memorial is ſweeter than honey, and mine inheritance than the honeycomb.

" Out of the mouth of the ALMIGHTY pro-
" ceeded I. Before any created being knew that
" it exiſted, I was. If there be in Heaven a light
" never to be extinguiſhed, I commanded it to
" ariſe. If the Earth is involved in clouds, I
" commanded the vapour to aſcend. The lofty
" places of the Earth are my habitation; and my
" throne is in the cloudy pillar. In ſolitude I
" make the round of the ſtarry Heavens; I plunge
" to the bottom of the vaſt abyſs, and walk ma-
" jeſtic under the waves of the Sea. On every
" land the ſole of my foot alights, and I travel
" from ſhore to ſhore. Wherever I appear, my
" ſovereignty is acknowledged. In the greatneſs
" of my might, I have ſubdued the heart of the
" humble and of the proud. I have ſought for a
" place of habitation in the midſt of them; but

 I will

"I will fix mine abode only in the heritage of JEHOVAH....I have lifted up myſelf as a cedar upon Mount Lebanon, and as the cypreſs-tree on the hills of Zion, My branches have been exalted to the Heavens, like the palm-trees of Kadeſh, and as the bloſſoms of the roſe which ſurround Jericho. I am beautiful as the olive on the brow of the hill, and majeſtic as the plane-tree, in an open place, by the fountains of water..... I have extended my boughs as the terebinthus; my branches are branches of honour and grace. I have put forth, as the vine, bloſſoms of the ſweeteſt perfume, and my buds have produced the fruits of glory and abundance. I am the parent of holy love, of fear, of knowledge, and of ſacred hope; I alone point out the road that is ſafe and eaſy; and unfold truths that give delight; in me repoſes all the expectation of life and virtue. Come to me, all ye who love me; and my never-ceaſing productions ſhall fill you with rapture; for my ſpirit is ſweeter than honey, and my diſtribution of it far ſuperior to the cells of the honeycomb."

This feeble tranſlation is after the Latin proſe verſion, itſelf a tranſlation from the Greek, and it again from the Hebrew. It is not to be doubted, therefore, that in paſſing through ſo many ſtrainers, much of the grace of the original muſt have evaporated.

evaporated. But even as it is, it poſſeſſes a decided ſuperiority, in reſpect of pleaſantneſs and ſublimity of imagery, over the verſes of *Lucretius*, who appears to have borrowed his principal beauties from this paſſage. And here I diſmiſs that Poet: the exordium of his performance is a complete refutation of it.

Pliny takes the directly oppoſite courſe. In the very threſhold of his Natural Hiſtory, he affirms that there is no God, and the whole of that Work is an elaborate demonſtration of the being of GOD. His authority muſt neceſſarily be of conſiderable weight, as it is not that of a Poet, to whom opinions are a matter of indifference, provided he can produce a ſtriking picture; nor that of a ſectary, obſtinately determined to ſupport a party, whatever violence may be done to conſcience; nor, finally, that of a flatterer, making his court to vicious Princes. *Pliny* wrote under the virtuous *Titus*, and has dedicated his Book to him. He carries to ſuch a height, the love of truth, and contempt of the glory of the age in which he lived, as to condemn the victories of *Ceſar*, in Rome itſelf, and when addreſſing a Roman Emperor. He is replete with humanity and virtue. He frequently expoſes to cenſure the cruelty of maſters to their ſlaves, the luxury of the great, nay, the diſſolute conduct of ſeveral Em-

 preſſes.

preſſes. He ſometimes pronounces the panegyric of good men; and exalts even above the inventors of arts, perſons who have rendered themſelves illuſtrious by their continency, their modeſty, and their piety.

His Work, in other reſpects, is a combination of brilliancies. It is a real Encyclopedia, which contains, as it ought, the hiſtory of the knowledge, and of the errors of his time. Theſe laſt are ſometimes imputed to him very unjuſtly, for he frequently brings them forward, merely in the view of refuting them. But he has been abuſed by the Phyſicians, and the Apothecaries, who have extracted the greateſt part of their preſcriptions from him, becauſe he finds fault with their conjectural art, and with their ſyſtematic ſpirit. He abounds, beſides, in curious information, in profound views, and intereſting traditions; and, what renders his performance invaluable, he uniformly expreſſes himſelf in a pictureſque manner. With all this taſte, judgment, and knowledge, *Pliny* is an atheiſt. Nature, from whoſe capacious ſtores, he has derived ſuch various intelligence, may addreſs him in the words of *Ceſar* to *Brutus*: *What, you too, my ſon!*

Pliny I love, and I eſteem: and if I may be permitted to ſay, in his juſtification, what I think of

his

his immortal Work, I believe it to be falſified in the paſſage where he is made to reaſon as an atheiſt. All his commentators agree in thinking, that no one Author has ſuffered more from the unfaithfulneſs of tranſcribers, than he has done; and this to ſuch a degree, that copies of his Natural Hiſtory exiſt, in which there are whole chapters entirely different. Conſult, among others, what *Mathiola* ſays on the ſubject, in his commentaries on *Dioſcorides*. I ſhall here take occaſion to obſerve, that the Writings of the Ancients, on their way to us, have paſſed through more than one unfaithful language, and what is much worſe, through more than one ſuſpicious hand. They have met with the fate of their monuments, among which their temples have been moſt of all degraded. Their books have, in like manner, been mutilated chiefly in thoſe paſſages which are favourable to religion, or the reverſe. An inſtance of this we have, in the tranſcription of *Cicero*'s Treatiſe *on the Nature of the Gods*, in which the objections againſt Providence are omitted.

Montagne upbraids the firſt Chriſtians with having ſuppreſſed, on account of four or five articles which contradicted their creed, a part of the Works of *Cornelius Tacitus*, "though," ſays he, "the Emperor *Tacitus*, his relation, had, by expreſs

" prefs edicts, furnifhed all the libraries in the
" World with them *."

In our own days, do we not fee how every party exerts itfelf to run down the reputation, and the opinions of the party which oppofes it? Mankind is, in the hands of religion and philofophy, like the old man in the fable, between two dames of different ages. They had both a mind to trim his locks, each in her own way. The younger picked carefully out all the white hairs, which fhe could not bear; the old one, for an oppofite reafon, as carefully removed the black: the confequence was, his head was fpeedily reduced to complete baldnefs.

It is impoffible to adduce a more fatisfactory demonftration of this ancient infidelity of the two parties, than an interpolation to be found in the Writings of *Flavius Jofephus*, who was contemporary with *Pliny*. He is made to fay, in fo many words, that the Meffiah was juft born; and he continues his narration, without referring, fo much as once, to this wonderful event, to the end of a voluminous hiftory. How can it be believed that *Jofephus*, who frequently indulges himfelf in

* Effays, book ii. chap. xix.

a tedious

a tedious detail of minute circumſtances, relating to events of little importance, ſhould not have reverted a thouſand and a thouſand times, to a birth ſo deeply intereſting to his Nation, conſidering that it's very deſtiny was involved in that event, and that even the deſtruction of Jeruſalem was only one of the conſequences of the death of JESUS CHRIST? He, on the contrary, perverts the meaning of the prophecies which announce Him, applying them to *Veſpaſian* and to *Titus*; for he, as well as the other Jews, expected a Meſſiah triumphant. Beſides, had *Joſephus* believed in CHRIST, would he not have embraced his Religion?

For a ſimilar reaſon, is it credible that *Pliny* ſhould commence his Natural Hiſtory with denying the exiſtence of GOD, and afterwards fill every page of it, with expatiating on the wiſdom, the goodneſs, the providence, the majeſty of Nature; on the preſages and pre-monitions, ſent expreſsly from the Gods; and even on the miracles divinely operated through the medium of dreams?

Certain ſavage tribes have likewiſe been adduced as affording examples of atheiſm, and every ſequeſtered corner of the Globe has been for this purpoſe explored. But obſcure remote tribes were no more intended to ſerve as an example to the

the human race, than certain mean and obſcure families, among ourſelves, could be propoſed as proper models to the Nation; eſpecially when the profeſſed object is to ſupport, by authority, an opinion which is neceſſarily ſubverſive of all ſociety. Beſides, ſuch aſſertions are abſolutely falſe. I have read the hiſtory of the voyages from which they are extracted. The travellers acknowledge, that they had but a tranſient view of thoſe people, and that they were totally unacquainted with their languages. They took it for granted, that there could be no religion among them, becauſe they ſaw no temples; as if any other temple were neceſſary to a belief in GOD than the temple of Nature! Theſe ſame travellers likewiſe contradict themſelves; for they relate, that thoſe Nations, whom they elſewhere repreſent as deſtitute of all religion, make obeiſance to the Moon, at the change, and when full, by proſtrating themſelves to the Earth, or by lifting up their hands to Heaven: that they pay reſpect to the memory of their fore-fathers, and place viands on their tombs. The immortality of the ſoul, admitted in whatever manner you will, neceſſarily ſuppoſes the exiſtence of GOD.

But if the firſt of all truths ſtood in need of teſtimony from men, we could collect that of the whole Human Race, from geniuſes the moſt exalted,

alted, down to the loweſt ſtate of ignorance. This unanimity of teſtimony is of irreſiſtible weight; for it is impoſſible that ſuch a thing ſhould exiſt on the Earth as univerſal error.

Hear what the ſage *Socrates* ſaid to *Euthydemus*, who expreſſed a wiſh to have a complete aſſurance that the Gods exiſted:

" Know, aſſuredly, that I told you the truth *,
" when I declared the exiſtence of the Gods, and
" aſſerted, that Man is their peculiar care: but
" expect not that they ſhould aſſume a ſenſible
" appearance, and preſent themſelves before you;
" ſatisfy yourſelf with the contemplation of their
" works, and with paying them adoration; re-
" member that this is the way in which they make
" themſelves known unto men: for of all the hea-
" venly powers whoſe liberality towards us is ſo
" great, no one ever becomes the viſible diſpenſer
" of his own bounty; and the great GOD him-
" ſelf, who created the Univerſe, and who ſuſ-
" tains that vaſt fabric, all the parts of which are
" adjuſted in perfect beauty and goodneſs; He
" who conſtantly watches over it, and takes care
" that it ſhall not wax old, and fall into decay
" through length of duration, but always ſubſiſt

* *Xenophon*'s Memorable Things of *Socrates*, book iv.

" in

"in immortal vigor *; He who alſo, with power "uncontrolable, conſtrains the whole to obey his "will; and that with a promptitude which far "ſurpaſſes

* *Socrates* had made a particular ſtudy of Nature; and although his judgment, reſpecting the duration and preſervation of her works, may be contrary to that of our philoſophy, which conſiders the Globe of the Earth, eſpecially, as in a progreſſive ſtate of ruin, it is in perfect harmony with that of the Holy Scriptures, which give us poſitive aſſurances that GOD upholds it, and with our own experience on the ſubject, as I have already ſhewn. We have little reaſon to undervalue the phyſical knowledge of the Ancients, except in ſo far as it was reduced to ſyſtem. We ought to recollect that they had made moſt of the diſcoveries which the Moderns boaſt as all their own. The Tuſcan Philoſophers underſtood the art of conjuring down the thunder. Good King *Numa* made experiments on this ſubject. *Tullus Hoſtilius* took a fancy to imitate, but fell a victim to his attempt, from want of underſtanding how to conduct the experiments in a proper manner. (Conſult *Plutarch.*) *Philolaüs*, the Pythagorean, advanced long before *Copernicus*, that the Sun was the centre of the World; and before *Chriſtopher Columbus*, that our Earth conſiſted of two Continents, that on which we are placed, and the one oppoſite to it. Several Philoſophers of Antiquity maintained, that comets were ſtars which purſued a regular courſe. *Pliny* himſelf ſays, that they all move in a northerly direction, which is generally true. It is not yet, however, two hundred years, ſince comets were believed, in Europe, to be vapors which caught fire in the intermediate regions of the air. The general belief, about that period, likewiſe, was, that the Sea furniſhed a ſupply of water to the fountains and rivers, by a proceſs of filtration through the pores of the Earth, though it is ſaid in a hundred paſſages of Scripture, that

" ſurpaſſes our imagination: HE, I ſay, is abun-
" dantly viſible in all thoſe wonders of which He
" is the AUTHOR. But let our eyes attempt to
" penetrate to his throne, and to contemplate all
" theſe mighty operations in their ſource, here He
" muſt be ever inviſible.

" Obſerve, for a moment, that the Sun, who
" ſeems deſignedly expoſed to the view of the
" whole Creation, permits no one, however, ſtea-
" dily to behold him: the man who dares to
" make the raſh attempt, is inſtantly puniſhed
" with blindneſs. Nay, more, every inſtrument
" employed by the Gods is inviſible. The thun-
" der is darted from on high; it daſhes in pieces

that by the rains their ſources are kept flowing. Of this we now have the moſt complete conviction, by accurate obſervations on the evaporations of the Ocean. The monuments which the Ancients have tranſmitted to us in Architecture, Sculpture, Poetry, Tragedy, Hiſtory, will ever ſerve as models to us. We are indebted to them beſides for the invention of almoſt all the other Arts; and it is preſumable that theſe Arts had the ſame ſuperiority over ours, which their liberal Arts have. As to the natural Sciences, they have not left us any object of compariſon; beſides, the Prieſts, who were chiefly employed in the cultivation of them, carefully concealed their knowledge from the People. There is little room to doubt, that they poſſeſſed, on this ſubject, an illumination far tranſcending ours. Conſult what the judicious Sir *William Temple* has ſaid of the magic of the ancient Egyptians.

" every

" every thing it meets : but no one can ſee it fall, " can ſee it ſtrike, can ſee it return. The winds " are inviſible, though we ſee well the ravages " which they every day commit, and feel their in- " fluence the moment that they begin to blcw. If " there be any thing in Man that partakes of the " divine Nature, it is his ſoul. There can be no " doubt that this is his directing, governing prin- " ciple, nevertheleſs, it is impoſſible to ſee it. From " all this be inſtructed not to deſpiſe things invi- " ſible: be inſtructed to acknowledge their powers " in their effects, and to honour the DEITY."

Newton, who purſued his reſearches into the Laws of Nature ſo profoundly, never pronounced the name of GOD, without moving his hat, and otherwiſe expreſſing the moſt devout reſpect. He took pleaſure in recalling this ſublime idea, even in his moments of conviviality, and conſidered it as the natural bond of union among all Nations. *Corneille le Bruyn*, the Dutch Painter, relates, that happening to dine one day at his table, in company with ſeveral other foreigners, *Newton*, when the deſert was ſerved up, propoſed a health to the Men of every Country who believe in GOD. This was drinking the health of the Human Race. Is it poſſible to conceive, that ſo many Nations, of languages and manners ſo very different, and, in many caſes, of an intelligence ſo contracted,

contracted, ſhould believe in GOD, if that belief were the reſult of ſome tradition, or of a profound metaphyſical diſquiſition? It ariſes from the ſpectacle of Nature ſimply. A poor Arabian of the Deſert, ignorant as moſt of the Arabians are, was one day aſked, How he came to be aſſured that there was a God? " In the ſame way," replied he, " that I am able to tell, by the print impreſſed " on the ſand, whether it was a man or a beaſt " which paſſed that way *."

It is impoſſible for Man, as has been ſaid, to imagine any form, or to produce a ſingle idea of which the model is not in Nature. He expands his reaſon only on the reaſons which Nature has ſupplied. GOD muſt, therefore, neceſſarily exiſt, were it but for this, that Man has an idea of Him. But if, we attentively conſider, that every thing, neceſſary to Man, exiſts in a moſt wonderful adaptation to his neceſſities, for the ſtrongeſt of all reaſons, GOD likewiſe muſt exiſt,, He who is the univerſal adaptation of all the ſocieties of the Human Race.

But I ſhould wiſh to know, In what way, the perſons who doubt of his exiſtence, on a review of the Works of Nature, would deſire to be aſ-

* Travels through Arabia, by Monſ. *d'Arvieux.*

fured of it? Do they wifh that he fhould appear under a human form, and affume the figure of an old man, as he is painted in our churches? They would fay, This is a man. Were He to invest himfelf with fome unknown and celeftial form, could we in a human body fupport the fight? The complete and unveiled difplay of even a fingle one of his works on the Earth, would be fufficient to confound our feeble organs. For example, if the Earth wheels around it's axis, as is fuppofed, there is not a human being in exiftence, who, from a fixed point in the Heavens, could view the rapidity of it's motion without horror; for he would behold rivers, oceans, kingdoms whirling about under his feet, with a velocity almoft thrice as great as that of a cannon-ball. But even the fwiftnefs of this diurnal rotation is a mere nothing: for the rapidity with which the Globe defcribes it's annual circle, and hurls us round the Sun, is feventy-five times greater than that of a bullet fhot from the cannon. Were it but poffible for the eye to view through the fkin, the mechanifm of our own body, the fight would overwhelm us. Durft we make a fingle movement, if we faw our blood circulating, the nerves pulling, the lungs blowing, the humors filtrating, and all the incomprehenfible affemblage of fibres, tubes, pumps, currents, pivots, which fuftain an exiftence, at once fo frail and fo prefumptuous?

Would

Would we wiſh, on the contrary, that GOD ſhould manifeſt himſelf in a manner more adapted to his own nature, by the direct and immediate communication of his intelligence, to the excluſion of every intervenient mean?

Archimedes, who had a mind capable of ſuch intenſe application, as not to be diſturbed from his train of thought, by the ſack of Syracuſe, in which he loſt his life, went almoſt diſtracted, from the ſimple perception of a geometrical truth, of which he ſuddenly caught a glimpſe. He was pondering, while in the bath, the means of diſcovering the quantity of alloy which a raſcally goldſmith had mixed in *Hiero*'s golden crown; and having found it, from the analogy of the different weight of his own body, when in the water, and out of it, he ſprung from the bath, naked as he was, and ran like a madman through the ſtreets of Syracuſe, calling out, *I have found it! I have found it!*

When ſome ſtriking truth, or ſome affecting ſentiment, happens to lay hold of the audience at a theatre, you ſee ſome melted into tears, others almoſt choked with an oppreſſed reſpiration, others quite in a tranſport, clapping their hands, and ſtamping with their feet; the females in the boxes actually fainting away. Were theſe violent agitations of ſpirit to go on progreſſively but for a few

minutes

minutes only, the perſons ſubject to them might loſe their reaſon, perhaps their life. What would be the caſe, then, if the Source of all truth, and of all feeling, were to communicate himſelf to us in a mortal body? GOD has placed us at a ſuitable diſtance from his infinite Majeſty; near enough to have a perception of it, but not ſo near as to be annihilated by it. He veils his intelligence from us under the forms of matter; and He reſtores our confidence reſpecting the movements of the material world by the ſentiment of his intelligence. If at any time He is pleaſed to communicate himſelf in a more intimate manner, it is not through the channel of haughty Science, but through that of our virtue. He diſcloſes himſelf to the ſimple, and hides his face from the proud.

"But," it is aſked, "What made GOD? "Why ſhould there be a God?" Am I to call in queſtion his exiſtence, becauſe I am incapable of comprehending his origin? This ſtyle of reaſoning would enable us to conclude, that man does not exiſt: for, Who made men? Why ſhould there be men? Why am I in the world in the eighteenth century? Why did I not arrive in ſome of the ages which went before? and, Wherefore ſhould I not be here in thoſe which are to come? The exiſtence of GOD is at all times neceſſary, and that of Man is but contingent. Nay, this is not all; the ex-

iſtence

iſtence of Man is the only exiſtence apparently ſuperfluous in the order eſtabliſhed upon the Earth. Many iſlands have been diſcovered without inhabitants, which preſented abodes the moſt enchanting, from the diſpoſition of the valleys, of the waters, of the woods, of the animals. Man alone deranges the plans of Nature: he diverts the current from the fountain; he digs into the ſide of the hill; he ſets the foreſt on fire; he maſſacres without mercy every thing that breathes; every where he degrades the Earth, which could do very well without him.

The harmony of this Globe would be partially deſtroyed, perhaps entirely ſo, were but the ſmalleſt, and, ſeemingly, moſt inſignificant, genus of plants to be ſuppreſſed; for it's annihilation would leave a certain ſpace of ground deſtitute of verdure, and thereby rob of it's nouriſhment the ſpecies of inſect which there found the ſupport of life. The deſtruction of the inſect, again, would involve that of the ſpecies of bird, which in theſe alone finds the food proper for their young; and ſo on to infinity. The total ruin of the vegetable and animal kingdoms might take it's riſe from the failure of a ſingle moſs, as we may ſee that of an edifice commence in a ſmall crevice. But if the Human Race exiſted not, it would be impoſſible to ſuppoſe that any thing had been deranged:

 every

every brook, every plant, every animal, would always be in it's place. Indolent and haughty Philosopher, who presumest to demand of Nature, wherefore there should be a God, why demandest thou not rather wherefore there should be men?

All his Works speak of their AUTHOR. The plain which gradually escapes from my eye, and the capacious vault of Heaven which encompasses me on every side, convey to me an idea of his immensity; the fruits suspended on the bough within reach of my hand, announce his providential care; the voice of the tempest proclaims his power; the constant revolution of the seasons displays his wisdom; the variety of provision which his bounty makes, in every climate, for the wants of every thing that lives, the stately port of the forests, the soft verdure of the meadow, the grouping of plants, the perfume and enamel of flowers, an infinite multitude of harmonies, known and unknown, are the magnificent languages which speak of HIM to all men, in a thousand and a thousand different dialects.

Nay, the very order of Nature is superfluous: GOD is the only Being whom disorder invokes, and whom human weakness announces. In order to attain the knowledge of his attributes, we need only to have a feeling of our own imperfections.

Oh!

Oh! how ſublime is that prayer *, how congenial to the heart of Man, and ſtill in uſe among People whom we preſume to call Savages! "O Eternal! "Have mercy upon me, becauſe I am paſſing "away: O Infinite! becauſe I am but a ſpeck: "O Moſt Mighty! becauſe I am weak: O Source "of Life! becauſe I draw nigh to the grave: O "Omniſcient! becauſe I am in darkneſs: O All-"bounteous! becauſe I am poor: O All-ſuffi-"cient! becauſe I am nothing."

Man has given nothing to himſelf: he has received all. And "He who planted the ear, ſhall "He not hear? He who formed the eye, ſhall "He not ſee? He who teacheth Man knowledge, "ſhall not He know?" I ſhould conſider myſelf as offering an inſult to the underſtanding of my Reader, and ſhould derange the plan of my Work, were I to inſiſt longer on the proofs of the exiſt-

* See *Flacourt*'s Hiſtory of the Iſland of Madagaſcar, chap. xliv. page 182. You will there find this prayer, embarraſſed with many circumlocutions, but conveying the meaning which I have expreſſed. It is wonderfully ſtrange that Negros ſhould have diſcovered all the attributes of Deity, in the imperfections of Man. It is with juſt reaſon that the Divine Wiſdom has ſaid of itſelf, that it reſted on all Nations: *Et in omni terrâ ſteti, & in omni populo; & in omni populo primatum habui.* In every land, among every people, I fixed my ſtation; and obtained the chief place amidſt the Nations. ECCLES. chap. xxiv.

ence of GOD. It remains that I reply to the objections raised against his goodness.

It needs must be, we are told, that the God of Nature should differ from the God of Religion, for their Laws are contradictory. This is just the same thing with saying, that there is one God of metals, another God of plants, and another of animals, because all these beings are subjected to laws peculiar to themselves. Nay, in all the kingdoms of Nature, the *genera* and the *species* have other Laws besides, which are particular to them, and which, in many cases, are in opposition among themselves; but those different Laws constitute the happiness of each species in particular; and they concur, in one grand combination, in a most admirable manner, to promote the general felicity.

The Laws which govern Man are derived from the same plan of Wisdom which has constructed the Universe. Man is not a being of a nature perfectly simple. Virtue, which ought to be the great object of his pursuit on the Earth, is an effort which he makes over himself, for the good of Mankind, in the view of pleasing GOD only. It proposes to him, on the one hand, the Divine Wisdom as a model; and presents to him, on the other, the most secure and unerring path to his

own

own happineſs. Study Nature, and you will perceive that nothing can be more adapted to the felicity of Man, and that Virtue carries her reward in her boſom, even in this world. A man's continency and temperance ſecure his health; contempt of riches and glory, his repoſe: and confidence in GOD, his fortitude. What can be more adapted to the condition of a creature expoſed to ſo much miſery, than modeſty and humility Whatever the revolutions of life may be, he has no farther fear of falling, when he has taken his ſeat on the loweſt ſtep.

Let us not complain that GOD has made an unfair diſtribution of his gifts, when we ſee the abundance and the ſtate in which ſome bad men live. Whatever is on the Earth moſt uſeful, moſt beautiful, and the beſt, in every kind of thing, is within the reach of every man. Obſcurity is much better than glory, and virtue than talents. The Sun, a little field, a wife and children, are ſufficient to ſupply a conſtant ſucceſſion of pleaſures to him. Muſt he have luxuries too? A flower preſents him colours more lovely than the pearl dragged from the abyſſes of the Ocean; and a burning coal on his hearth has a brighter luſtre, and, beyond all diſpute, is infinitely more uſeful, than the famous gem which glitters on the head of the Grand Mogul.

After all, What did GOD owe to every man? Water from the fountain, a little fruit, wool to clothe him, as much land as he is able to cultivate with his own hands. So much for the wants of his body. As to thoſe of the ſoul, it is ſufficient for him to poſſeſs, in infancy, the love of his parents; in maturity, that of his wife; in old age, the gratitude of his children; at all ſeaſons, the good-will of his neighbours, the number of whom is reſtricted to four or five, according to the extent and form of his domain; ſo much knowledge of the Globe as he can acquire by rambling, half a day, ſo as to get home to his own bed at night, or, at moſt, to the extremity of his domeſtic horizon; ſuch a ſenſe of Providence as Nature beſtows on all men, and which will ſpring up in his heart fully as well after he has made the circuit of his field, as after returning from a voyage round the World.

With corporeal enjoyments, and mental gratifications like theſe, he ought to be content; whatever he deſires beyond theſe, is above his wants, and inconſiſtent with the diſtributions of Nature. It is impoſſible for him to acquire ſuperfluity but by the ſacrifice of ſome neceſſary; public conſideration he muſt purchaſe at the price of domeſtic happineſs; and a name in the world of Science, by renouncing his repoſe. Beſides, thoſe honours,

thoſe

thoſe attendants, thoſe riches, that ſubmiſſion which men ſo eagerly hunt after, are deſired unjuſtly. A man cannot obtain them but by plundering and enſlaving his fellow-citizens. The acquiſition of them expoſes to incredible labour and anxiety, the poſſeſſion is diſturbed by inceſſant care, and privation tears the heart with regret. By pretended bleſſings ſuch as theſe, health, reaſon, conſcience, all is depraved and loſt. They are as fatal to Empires as to families: it was neither by labour, nor indigence; no, not even by wars, that the Roman Empire fell into ruin; but by the accumulated pleaſures, knowledge, and luxury of the whole Earth.

Virtuous perſons, in truth, are ſometimes deſtitute not only of the bleſſings of Society, but of thoſe of Nature. To this I anſwer, that their calamities frequently are productive of unſpeakable benefit to them. When perſecuted by the world, they are frequently, they are uſually, incited to engage in ſome illuſtrious career. Affliction is the path of great talents, or, at leaſt, that of great virtues, which are infinitely preferable. "It is not "in your power," ſaid *Marcus Aurelius*, "to be a "Naturaliſt, a Poet, an Orator, a Mathematician; "but it is in your power to be a virtuous man, "which is the beſt of all."

 I have

I have remarked, befides, that no tyranny ftarts up, of whatever kind, refpecting either facts or opinions, but a rival tyranny inftantly ftarts up in oppofition, which counterbalances it; fo that virtue finds a protection from the very efforts made by vice to opprefs and crufh it. The good man frequently fuffers: it is admitted; but if Providence were to interpofe for his relief, as foon as he needed it, Providence would be at his difpofal; in other words, Man would have the direction of his MAKER. Befides, virtue, in this cafe, would merit no praife: but rarely does it happen that the virtuous man does not fooner or later behold the downfal of his tyrant. Or fuppofing, the worft that can happen, that he falls a victim to tyranny, the boundary of all his woes is death. GOD could owe Man nothing. He called him from non-exiftence into life; in withdrawing life, He only refumes what He gave: we have nothing whereof to complain.

An entire refignation to the will of GOD ought, in every fituation, to foothe the foul to peace. But if the illufions of a vain world fhould chance to ruffle our fpirit, let me fuggeft a confideration which may go far toward reftoring our tranquillity. When any thing in the order of Nature bears hard upon us, and infpires miftruft of it's

AUTHOR,

Author, let us ſuppoſe an order of things contrary to that which galls us, and we ſhall find a multitude of conſequences reſulting from this hypotheſis, which would involve much greater evils than thoſe whereof we complain. We may employ the contrary method, when ſome imaginary plan of human perfection would attempt to ſeduce us. We have but to ſuppoſe it's exiſtence, in order to ſee innumerable abſurd conſequences ſpring up out of it. This twofold method, employed frequently by *Socrates*, rendered him victorious over all the ſophiſts of his time, and may ſtill be ſucceſsfully employed to confute thoſe of the age in which we live. It is at once a rampart which defends our feeble reaſon, and a battery which levels with the duſt all the deluſion of human opinions. If you wiſh to juſtify the order of Nature, it is ſufficient to deviate from it; and, in order to refute all human ſyſtems, nothing more is neceſſary than to admit them.

For example, complaints are made of death: but if men were not to die, what would become of their poſterity? Long before now there would not have been room for them on the face of the Earth. Death, therefore, is a benefit. Men complain of the neceſſity of labouring: but unleſs they laboured, how could they paſs their time? The reputedly happy of the age, thoſe who have nothing to do, are

are at a loſs how to employ it. Labour, therefore, is a benefit. Men envy the beaſts the inſtinct which guides them: but if, from their birth, they knew, like them, all that they ever are to know, what ſhould they do in the World? They would ſaunter through it without intereſt, and without curioſity. Ignorance, therefore, is a benefit.

The other ills of Nature are equally neceſſary. Pain of body, and vexation of ſpirit, which ſo frequently croſs the path of life, are barriers erected by the hand of Nature, to prevent our deviating from her Laws. But for pain, bodies would be broken to pieces on the ſlighteſt ſhock: but for chagrin, ſo frequently the companion of our enjoyments, the mind would become the victim of every ſickly appetite. Diſeaſes are the efforts of temperament to purge off ſome noxious humour. Nature employs diſeaſe not to deſtroy the body, but to preſerve it. In every caſe, it is the conſequence of ſome violation of her Laws, phyſical or moral. The remedy is frequently obtained by leaving her to act in her own way. The regimen of aliments reſtores our health of body, and that of men, tranquillity of mind. Whatever may be the opinions which diſturb our repoſe in ſociety, they almoſt always vaniſh into air in ſolitude. Sleep itſelf ſimply diſpels our chagrin more gently, and more infallibly, than a book of morals.

If our diſtreſſes are immoveable, and ſuch as break our reſt, they may be mitigated by having recourſe to GOD. Here is the central point toward which all the paths of human life converge. Proſperity, at all ſeaſons, invites us to his preſence, but adverſity leaves us no choice. It is the means which GOD employs to force us to take refuge in Himſelf alone. But for this voice, which addreſſes itſelf to every one of us, we ſhould ſoon forget Him, eſpecially in the tumult of great cities, where ſo many fleeting intereſts claſh with thoſe which are eternal, and where ſo many ſecond cauſes ſwallow up all attention to the FIRST.

As to the evils of Society, they are no part of the plan of Nature; but thoſe very evils demonſtrate the exiſtence of another order of things: for is it natural to imagine, that the BEING good and juſt, who has diſpoſed every thing on the Earth to promote the happineſs of Man, will permit him to be deprived of it, without puniſhing the wretch who dared to counteract his gracious deſigns? Will He do nothing in behalf of the virtuous, but unfortunate, man, whoſe conſtant ſtudy was to pleaſe Him, when He has loaded with bleſſings ſo many miſcreants who abuſe them? After having diſplayed a bounty which has met with no return, will He fail in executing neceſſary juſtice?

But

“ But,” we are told, “ every thing dies with “ us. Here we ought to believe our own expe- “ rience; we were nothing before our birth, and “ we ſhall be nothing after death.” I adopt the analogy; but if I take my point of compariſon from the moment when I was nothing, and when I came into exiſtence, What becomes of this argument? Is not one poſitive proof better than all the negative proofs in the world? You conclude from an unknown paſt to an unknown future, to perpetuate the nothingneſs of Man; and I, for my part, deduce my conſequence from the preſent, which I know, to the future, which I do not know, as an aſſurance of this future exiſtence. I proceed on the preſumption of a goodneſs and a juſtice to come, from the inſtances of goodneſs and juſtice which I actually ſee diffuſed over the Univerſe.

Beſides, if we have, in our preſent ſtate, the deſire and the pre-ſentiment only of a life to come; and if no one ever returned thence to give us information concerning it, the reaſon is, a proof more ſenſible would be inconſiſtent with the nature of our preſent life on the Earth. Evidence on this point muſt involve the ſame inconveniences with that of the exiſtence of GOD. Were we aſſured by ſome ſenſible demonſtration, that a world to come was prepared for us, I have the fulleſt

fulleſt conviction that all the purſuits of this world would from that inſtant be abandoned. This perſpective of a divine felicity, here below, would throw us into a lethargic rapture.

I recollect that on my return to France, in a veſſel which had been on a voyage to India, as ſoon as the ſailors had perfectly diſtinguiſhed the land of their native country, they became, in a great meaſure, incapable of attending to the buſineſs of the ſhip. Some looked at it wiſtfully, without the power of minding any other object; others dreſſed themſelves in their beſt clothes, as if they had been going that moment to diſembark; ſome talked to themſelves, and others wept. As we approached, the diſorder of their minds increaſed. As they had been abſent ſeveral years, there was no end to their admiration of the verdure of the hills, of the foliage of the trees, and even of the rocks which ſkirted the ſhore, covered over with ſea-weeds and moſſes; as if all theſe objects had been perfectly new to them. The church ſpires of the villages where they were born, which they diſtinguiſhed at a diſtance up the country, and which they named one after another, filled them with tranſports of delight. But when the veſſel entered the port, and when they ſaw on the quays, their friends, their fathers, their mothers, their wives, and their children, ſtretching out their arms

to

to them with tears of joy, and calling them by their names, it was no longer poſſible to retain a ſingle man on board; they all ſprung aſhore, and it became neceſſary, according to the cuſtom of the port, to employ another ſet of mariners to bring the veſſel to her moorings.

What, then, would be the caſe, were we indulged with a ſenſible diſcovery of that Heavenly Country, inhabited by thoſe who are moſt dear to us, and who alone are moſt worthy of our ſublime affections? All the laborious and vain ſolicitudes of a preſent life would come to an end. The paſſage from the one world to the other being in every man's power, the gulf would be quickly ſhot: but Nature has involved it in obſcurity, and has planted doubt and apprehenſion to guard the paſſage.

It would appear, we are told by ſome, that the idea of the immortality of the ſoul, could ariſe only from the ſpeculations of men of genius, who, conſidering the combination of this Univerſe, and the connection which preſent ſcenes have with thoſe which preceded them, muſt have thence concluded, that they had a neceſſary connection with futurity; or elſe, that this idea of immortality was introduced by Legiſlators, in a ſtate of poliſhed ſociety, as furniſhing a diſtant hope, tending to

conſole

conſole Mankind under the preſſure of their political injuſtice. But, if this were the caſe, how could it have found it's way into the deſerts, and entered the head of a Negro, of a Caraïb, of a Patagonian, of a Tartar? How could it have been diffuſed, at once, over the iſlands of the South-Seas, and over Lapland; over the voluptuous regions of Aſia, and the rude Climates of North-America; among the inhabitants of Paris, and thoſe of the new Hebrides? How is it poſſible that ſo many Nations, ſeparated by vaſt Oceans, ſo different in manners and in language, ſhould have unanimouſly adopted one opinion; Nations which frequently affect, from national animoſity, a deviation from the moſt trivial cuſtoms of their neighbours?

All believe in the immortality of the ſoul. Whence could they have derived a belief ſo flatly contradicted by their daily experience? They every day ſee their friends die; but the day never comes when any one re-appears. In vain do they carry victuals to their tombs; in vain do they ſuſpend, with tears, on the boughs of the adjoining trees, the objects which in life were moſt dear to them; neither theſe teſtimonies of an inconſolable friendſhip, nor the vows of conjugal affection challenged by their drooping mates, nor the lamentations of their dear children, poured out over the

earth which covers their remains, can bring them back from the land of ſhadows. What do they expect for themſelves, from a life to come, who expreſs all this unavailing regret over the aſhes of their departed favourites? There is no proſpect ſo inimical to the intereſts of moſt men; for ſome, having lived a life of fraud, or of violence, have reaſon to apprehend a ſtate of puniſhment; others, having been oppreſſed in this world, might juſtly fear, that the life to come was to be regulated conformably to the ſame deſtiny which preſided over that which they are going to leave.

Shall we be told, It is pride which cheriſhes this fond opinion in their breaſts? What, is it pride that induces a wretched Negro, in the Weſt Indies, to hang himſelf, in the hope of returning to his own country, where a ſecond ſtate of ſlavery awaits him? Other Nations, ſuch as the iſlanders of Taïti, reſtrict the hope of this immortality, to a renovation of preciſely the ſame life which they are going to leave. Ah! the paſſions preſent to Man far different plans of felicity; and the miſeries of his exiſtence, and the illumination of his reaſon, would long ago have deſtroyed the life that is, had not the hope of a life to come been, in the human breaſt, the reſult of a ſupernatural feeling.

But

But wherefore is man the only one of all animals ſubjected to other evils than thoſe of Nature? Wherefore ſhould he have been abandoned to himſelf, diſpoſed as he is to go aſtray? He is, therefore, the victim of ſome malignant Being.

It is the province of Religion to take us up where Philoſophy leaves us. The nature of the ills which we endure, unfolds their origin. If man renders himſelf unhappy, it is becauſe he would, himſelf, be the arbiter of his own felicity. Man is a god in exile. The reign of *Saturn*, the Golden Age, *Pandora*'s box, from which iſſued every evil, and at the bottom of which hope alone remained; a thouſand ſimilar allegories, diffuſed over all Nations, atteſt the felicity, and the fall, of a firſt Man.

But there is no need to have recourſe to foreign teſtimonies. We carry the moſt unqueſtionable evidence in ourſelves. The beauties of Nature bear witneſs to the exiſtence of GOD, and the miſeries of Man confirm the truths of Religion. There exiſts not a ſingle animal but what is lodged, clothed, fed, by the hand of Nature, without care, and almoſt without labour. Man alone, from his birth upward, is overwhelmed with calamity. Firſt, he is born naked; and poſſeſſed of ſo little inſtinct, that if the mother who bare

 him,

him, were not to rear him for ſeveral years, he would periſh of hunger, of heat, or of cold. He knows nothing but from the experience of his parents. They are under the neceſſity of finding him a place where to lodge, of weaving garments for him, of providing his food for eight or ten years. Whatever encomiums may have been paſſed on certain countries for their fertility, and the mildneſs of their climate, I know of no one in which ſubſiſtence of the ſimpleſt kind does not coſt Man both ſolicitude and labour. In India, he muſt have a roof over his head to ſhelter him from the heat, from the rains, and from the inſects. There, too, he muſt cultivate rice, weed it, threſh it, ſhell it, dreſs it. The banana, the moſt uſeful of all the vegetables of thoſe countries, ſtands in need of being watered, and of being hedged round, to ſecure it from the attacks of the wild beaſts by night. Magazines muſt likewiſe be provided, for the preſervation of proviſions during thoſe ſeaſons when the Earth produces nothing. When Man has thus collected around him every thing neceſſary to a quiet and comfortable life, ambition, jealouſy, avarice, gluttony, incontinency, or languor, take poſſeſſion of his heart. He periſhes almoſt always the victim of his own paſſions. Undoubtedly, to have ſunk thus below the level of the beaſts, Man muſt have aſpired at an equality with the Deity.

Wretched

Wretched mortals! Seek your happineſs in virtue, and you will have no ground of complaint againſt Nature. Deſpiſe that uſeleſs knowledge, and thoſe unreaſonable prejudices, which have corrupted the Earth, and which every age ſubverts in it's turn. Love thoſe Laws which are eternal. Your deſtiny is not abandoned to chance, nor to miſchievous demons. Recal thoſe times, the recollection of which is ſtill freſh among all Nations. The brute creation every where found the means of ſupporting life; Man alone had neither aliment, nor clothing, nor inſtinct.

Divine wiſdom left Man to himſelf, in order to bring him back to GOD. She ſcattered her bleſſings over the whole Earth that, in order to gather them, he might explore every different region of it; that he might expand his reaſon by the inſpection of her works, and that he might become enamoured of her from a ſenſe of her benefits. She placed between herſelf and him, harmleſs pleaſures, rapturous diſcoveries, pure delights, and endleſs hopes, in order to lead him to herſelf, ſtep by ſtep, through the path of knowledge and happineſs. She fenced his way on both ſides, by fear, by languor, by remorſe, by pain, by all the ills of life, as boundaries deſtined to prevent him from wandering and loſing himſelf. The mother, thus, ſcatters fruit along the

the ground to induce her child to learn to walk; ſhe keeps at a little diſtance; ſmiles to him, calls him, ſtretches out her arms towards him: but if he happens to fall, ſhe flies to his aſſiſtance, ſhe wipes away his tears, and comforts him.

Thus Providence interpoſes for the relief of Man, ſupplying his wants in a thouſand extraordinary ways. What would have become of him in the earlieſt ages, had he been abandoned to his own reaſon, ſtill unaided by experience? Where found he corn, which at this day conſtitutes a principal part of the food of ſo many Nations, and which the Earth, while it ſpontaneouſly produces all ſorts of plants, no where exhibits? Who taught him agriculture, an art ſo ſimple, that the moſt ſtupid of Mankind is capable of learning it, and yet ſo ſublime, that the moſt intelligent of animals never can pretend to practiſe it? There is ſcarcely an animal but what ſupports it's life by vegetables, but what has daily experience of their re-production, and which does not employ, in queſt of thoſe that ſuit them, many more combinations than would have been neceſſary for re-ſowing them.

But, on what did Man himſelf ſubſiſt, till an *Iſis* or a *Ceres* revealed to him this bleſſing of the ſkies? Who ſhewed him, in the firſt ages of the World, the original fruits of the orchard, ſcattered over

over the forefts, and the alimentary roots concealed in the bofom of the Earth? Muft he not, a thoufand times, have died of hunger, before he had collected a fufficiency to fupport life, or of poifon, before he had learned to felect, or of fatigue and reftlefsnefs, before he had formed round his habitation grafs-plots and arbours? This art, the image of creation, was referved for that Being alone who bare the impreffion of the Divinity.

If Providence had abandoned Man to himfelf, on proceeding from the hands of the Creator, what would have become of him? Could he have faid to the plains: Ye unknown forefts, fhew me the fruits which are my inheritance? Earth, open, and difclofe, in the roots buried under thy furface, my deftined aliment? Ye plants, on which my life depends, manifeft to me your qualities, and fupply the inftinct which Nature has denied? Could he have had recourfe, in his diftrefs, to the compaffion of the beafts, and, ready to perifh with hunger, have faid to the cow: Take me into the number of thy children, and let me fhare, with thy offspring, the produce of one of thy fuperfluous teats? When the breath of the North-wind made him fhiver with cold, would the wild goat and timid fheep have run at his call to warm him with their fleeces? Wandering, without a protector, and without an afylum, when he heard by night the

the howlings of ferocious animals demanding their prey, could he have made ſupplication to the generous dog, and ſaid to him: Be thou my defender, and I will make thee my ſlave? Who could have ſubjected to his authority ſo many animals which ſtood in no need of him, which ſurpaſſed him in cunning, in ſpeed, in ſtrength, unleſs the hand which, notwithſtanding his fall, deſtined him ſtill to empire, had humbled their heads to the obedience of his will?

How was it poſſible for him, with a reaſon leſs infallible than their inſtinct, to raiſe himſelf up to the very Heavens, to meaſure the courſe of the ſtars, to croſs the Ocean, to call down the thunder, to imitate moſt of the Works and appearances of Nature? We are ſtruck with aſtoniſhment at theſe things now; but I am much rather aſtoniſhed, that a ſenſe of Deity ſhould have ſpoken to his heart, long before a comprehenſion of the Works of Nature had perfected his underſtanding. View him in the ſtate of nature, engaged in perpetual war with the elements, with beaſts of prey, with his fellow-creatures, with himſelf; frequently reduced to ſituations of ſubjection which no other animal could poſſibly ſupport; and he is the only being who diſcovers, in the very depth of miſery, the character of infinity, and the reſtleſsneſs of immortality. He erects trophies; he engraves the

record

record of his atchievements on the bark of trees; he celebrates his funeral obſequies, and puts reverence on the aſhes of his forefathers, from whom he has received an inheritance ſo fatal.

He is inceſſantly agitated by the rage of love or of vengeance. When he is not the victim of his fellow-men, he is their tyrant: and he alone knows that Juſtice and Goodneſs govern the World, and that Virtue exalts Man to Heaven. He receives, from his cradle, none of the preſents of Nature, no ſoft fleece, no plumage, no defenſive armour, no tool, for a life ſo painful and ſo laborious; and he is the only being who invites the Gods to his birth, to his nuptials, and to his funeral obſequies.

However far he may have been miſled by extravagant opinions, whenever he is ſtruck by unexpected burſts of joy or grief, his ſoul, by an involuntary movement, takes refuge in the boſom of Deity. He cries out: Ah, my GOD! He raiſes to Heaven ſuppliant hands, and eyes bathed with tears, in hope of there finding a Father. Ah! the wants of Man bear witneſs to the providence of a Supreme Being. He has made Man feeble and ignorant, only that he may ſtay himſelf on his ſtrength, and illuminate himſelf by his light; and ſo far is it from being true, that chance, or malignant ſpirits, domineer over a World, where every

 thing

thing concurred to deſtroy a creature ſo wretched, his preſervation, his enjoyments, and his empire, demonſtrate, that, at all times, a beneficent GOD has been the friend, and the protector of human life.

STUDY NINTH.

OBJECTIONS AGAINST THE METHODS OF OUR REASON, AND THE PRINCIPLES OF OUR SCIENCES.

I HAVE difplayed, from the beginning of this Work, the immenfity of the ftudy of Nature. I there propofed new plans, to affift us in forming an idea of the order which fhe has eftablifhed in all her various kingdoms: but, checked by my own incapacity, all that I could prefume to promife was, to trace a flight fketch of what exifts in the vegetable order. However, before I proceeded to lay down new principles on this fubject, I thought myfelf called upon to refute the prejudices which the World, and our Sciences themfelves, might have diffufed over Nature, in the minds of my Readers. I have, accordingly, exhibited a faint reprefentation of the goodnefs of Providence to the age in which we live, and the objections which have been raifed againft it. I have replied to thofe objections, in the fame order in which I had ftated them, pointing out, as I went along, the

the wonderful harmony which prevails in the diſtribution of the Globe, abandoned, as ſome would have it, to the ſimple Laws of motion and of chance.

I have preſented a new theory of the courſes of the Tides, of the motion of the Earth in the Ecliptic, and of the Univerſal Deluge: and I am now going to attack, in my turn, the methods of our Reaſon, and the Elements of our Sciences, before I proceed to lay down ſome principles, which may indicate to us a certain path to the diſcovery of Truth.

But let it be underſtood, that if, in the courſe of this Work, and particularly in this article, I have combatted our natural Sciences, it is only ſo far as ſyſtem is concerned; I give them full credit on the ſide of obſervation. Beſides, I highly reſpect the perſons who devote themſelves to the purſuit of Science. I know nothing in the world more eſtimable, next to the virtuous man, than the man of real knowledge, if, however, it be poſſible to ſeparate the Sciences from Virtue. What ſacrifices and privations does not the cultivation of them demand! While the herd of Mankind is growing rich and renowned by agriculture, commerce, navigation, and the arts, it has been frequently ſeen, that thoſe who cleared the way for all the reſt,

reſt, lived in indigence themſelves, unknown to, and diſregarded by, their contemporaries. The man of Science, like the torch, illuminates all around him, and remains himſelf in obſcurity.

I have attacked, then, neither the Learned, whom I honour, nor the Sciences, which have been my conſolation through life; but had time permitted, I would have diſputed every inch of ground with our methods and our ſyſtems. They have thrown us into ſuch a variety of abſurd opinions, in every branch of ſcientific reſearch, that, I do not heſitate to affirm, our Libraries, at this day, contain more of error than of information. Nay, I could venture to wager, that were you to introduce a blind man * into the King's Library, and

* The word in the original is, a *Quinze-vingt*. The Quinze-vingt at Paris is a royal foundation of Saint *Louis*, for the relief of *fifteen ſcore*, that is, three hundred blind perſons: hence, in the Pariſian phraſe, any one, in general, afflicted with the want of ſight is denominated a Quinze-vingt.

The *King's-Library* is another eſtabliſhment, which reflects the higheſt honour on the French Government. It was founded by the famous Cardinal *de Richlieu*; who, however, transferred the credit of it to the Prince. The building is erected in the very centre of the Metropolis, and contains a moſt magnificent collection of books and manuſcripts, in all languages, and relative to every art and ſcience; of drawings, models, mathematical inſtruments, &c. It is opened on certain days of the week, and

and let him take out any book at a venture, the firſt page of that book on which he may chance to lay his hand, ſhall contain an error. How many probabilities ſhould I have in my favour, among romance-writers, poets, mythologiſts, hiſtorians, panegyriſts, moraliſts, naturaliſts of ages paſt, and metaphyſicians of all ages and of all countries? There is, in truth, a very ſimple method to check the miſchief which their opinions might produce; it is to arrange all the books which contradict themſelves, by the ſide of each other; as theſe are, in every walk of literature, almoſt infinite in number, the reſult of human knowledge, as far as they convey it, will be reduced almoſt to nothing.

By our very methods of acquiring knowledge, we are deluded into error. Firſt, to ſucceed in the ſearch of Truth, we ought to be entirely exempted from the influence of paſſion; and yet, from our earlieſt infancy, the paſſions are wilfully ſet afloat, and thus reaſon receives an improper bias from the very firſt. This maxim is laid down as the fundamental baſis of all conduct, and of all opinion,

and for a conſiderable part of the day, for the inſpection and uſe of ſtrangers as well as natives. And, even in Paris, I ſaw no petty officer, on duty at the Library, hold out his hand for a fee.
H. H.

Make

Make your fortune. The effect of this is, we no longer prize any thing but what has ſome relation to this appetite. Even natural truths vaniſh out of ſight, becauſe we no longer contemplate Nature, except in machines or books.

In order to our believing in GOD, ſome perſon of conſequence muſt aſſure us there is one. If *Fenelon* ſays it is ſo, we admit it, becauſe *Fenelon* was preceptor to the Duke of *Burgundy*, an Archbiſhop, a man of quality, and addreſſed by the title of My Lord. We are fully convinced of the exiſtence of GOD by the arguments of *Fenelon*, becauſe his credit reflects ſome upon ourſelves. I do not mean to affirm, however, that his virtue contributed nothing to the force of his reaſoning: but no farther than as it ſtands in connection with his reputation and his fortune; for were we to meet this ſame virtue in a water-porter, it's luſtre would fade in our eyes. To no purpoſe would ſuch a one furniſh proofs of the exiſtence of a GOD, more unanſwerable than all the ſpeculations of Philoſophy, in a life labouring under contempt, hard, poor, laborious, exhibiting uniform probity and fortitude, and paſſed in perfect reſignation to the will of the Supreme: theſe teſtimonies ſo poſitive are of no conſideration at all with us; we eſtimate their importance from the celebrity which they have acquired. Let ſome Emperor be diſ-

poſed

poſed to adopt the Philoſophy of this obſcure man, his maxims will be immediately extolled in every book that is publiſhed, and quoted in every academical theſis; engraved portraits of the Author would decorate every pannel, and his buſt in plaſter of Paris grace every chimney; he ſhould be an *Epictetus*, a *Socrates*, a *John James Rouſſeau*.

But ſhould a period come, in which aroſe men of as high reputation as theſe, in favour with powerful Princes, whoſe intereſt it might be, that there ſhould be no GOD, and who, in order to make their court to ſuch Princes, denied his exiſtence; from the ſame effect of our education, which engaged us to believe in GOD, on the faith of *Fenelon*, *Epictetus*, *Socrates*, and *John James Rouſſeau*, we would renounce our belief, on the credit of the others, being men of ſuch high conſideration, and, beſides, ſo much nearer to us. It is thus our education warps us: it diſpoſes us indifferently to preach the Goſpel or the Alcoran, according as our intereſt is concerned in the one or in the other.

Hence aroſe this maxim ſo univerſal and ſo pernicious: *Primò vivere, deinde philoſophari*—"To "live firſt, and ſeek wiſdom afterward." The man who is not ready to give his life in exchange for wiſdom, is unworthy of knowing her. *Juvenal's*

nal's ſentiment is much more rational, and deſerves rather to be adopted :

Summum crede nefas vitam præferre pudori ;
Et propter vitam, vivendi perdere cauſas *.

" The blackeſt of crimes, believe it, is to pre-
" fer life to honour ; and for the ſake of a few
" paltry years of mere exiſtence, to ſacrifice that
" which alone makes life deſirable."

I ſay nothing of other prejudices which oppoſe themſelves to the inveſtigation of truth, ſuch as thoſe of ambition, which ſtimulate every one among us to diſtinguiſh himſelf; and this can hardly be done except in two ways ; either by ſubverting maxims the moſt undoubted, and the moſt firmly eſtabliſhed, in order to ſubſtitute our own in their place ; or by making an effort to pleaſe all parties, from uniting opinions the moſt contradictory ; and this, taking the two caſes together, multiplies the ramifications of error to infinity. Truth has, farther, to encounter a multitude of other obſtacles on the part of powerful men, who can make an advantage of error. I ſhall confine

* Imitated thus :

The worſt of crimes, believe it, generous youth,
Is to buy life, by ſelling ſacred truth :
Virtue's the gem of life, the Sage's ſtore ;
But life is death, when honour is no more.

myſelf

myſelf to thoſe which are to be imputed to the weakneſs of our reaſon, and ſhall examine their influence on our acquirements in natural knowledge.

It is eaſy to perceive, that moſt of the Laws which we have preſumed to aſſign to Nature, have been deduced ſometimes from our weakneſs, ſometimes from our pride. I ſhall take a few inſtances, as they happen to occur to my thoughts, and which are conſidered as moſt indubitably certain. For example, we have ſettled it, that the Sun muſt be in the centre of the planets, in order to regulate their motion, becauſe we are under the neceſſity of placing ourſelves in the centre of our perſonal concerns, for the purpoſe of keeping an eye over them. But if, in the caſe of the celeſtial ſpheres, the centre naturally belongs to the moſt conſiderable bodies, how comes it about that *Saturn* and *Jupiter*, which greatly exceed our Globe in magnitude, ſhould be at the extremity of our vortex?

As the ſhorteſt road is that which fatigues us leaſt, we have taken upon us to conclude, that, in like manner, this muſt be the plan of Nature. Conſequently, in order to ſpare the Sun a journey of about ninety millions of leagues, which he muſt every day perform, in giving us light, we ſet the Earth

Earth a ſpinning round it's own axis. It may be ſo; but if the Earth revolves round itſelf, there muſt be a great difference in the ſpace paſſed through by two cannon-balls, ſhot off at the ſame inſtant, the one toward the Eaſt, and the other toward the Weſt; for the firſt goes along with the motion of the Earth, and the ſecond goes in the oppoſite direction. While both are flying in the air, and removing the one from the other, each proceeding at the rate of ſix thouſand fathoms in a minute, the Earth, during that ſame minute, is outflying the firſt, and removing from the ſecond, with a velocity which carries it along at the rate of ſixteen thouſand fathoms; this ought to put the point of departure twenty-two thouſand fathom behind the ball which is flying to the Weſt, and ten thouſand fathom before that which is flying to the Eaſt.

I once propoſed this difficulty to a very able Aſtronomer, who conſidered it as almoſt an inſult. He replied, as the cuſtom of our Doctors is, that the objection had been made long before, and reſolved. At length, as I intreated him to have compaſſion on my ignorance, and to give me the ſolution, he retailed to me the pretended experiment, of a ball dropped from the top of a ſhip's maſt, when under ſail, and which falls on deck cloſe to the maſt, notwithſtanding the ſhip's progreſſive motion.

tion. "The Earth," ſaid he, "carries along, in "like manner, the rotation of the two balls, in "it's own movement. Were they to be ſhot off "in a perpendicular direction, they would fall "back preciſely on the point from whence they "were emitted." As axioms are not very expenſive, and ſerve to cut ſhort all difficulties, he ſubjoined this as one: "The motion of a great body abſorbs that of a ſmall." If this axiom be founded in truth, replied I, the ball dropped from the top of the maſt of a ſhip under ſail, ought not to fall back cloſe to the bottom of the maſt; it's motion ought to be abſorbed, not by that of the veſſel, but by that of the Earth, which is far the greater body. It ought to obey only the direction of gravity; and, for the ſame reaſon, the Earth ought to abſorb the motion of the bullet which is going along with it toward the Eaſt, and force it back into the cannon from which it iſſued.

I was unwilling to puſh this difficulty any farther; but I remained, as has frequently happened to me, after the moſt luminous ſolutions of our ſchools, ſtill more *perplexed* than I was before. I began to call in queſtion the truth of not only a ſyſtem and of an experiment, but what is worſe, of an axiom. Not that I reject our planetary ſyſtem, ſuch as it is given us; but I admit it for the

ſame

ſame reaſon which at firſt ſuggeſted it. It is from it's being the beſt adapted to the weakneſs of my body, and of my mind. I find, in fact, that the rotation of the Earth, every day, ſaves the Sun a prodigious journey: but, in other reſpects, I by no means believe that this ſyſtem is that of Nature, and that ſhe has diſcloſed the cauſes of motion to men, who are incapable of accounting for the movement of their own fingers.

I beg leave to ſuggeſt ſome farther probabilities in favour of the Sun's motion round the Earth. "The Aſtronomers of Greenwich, having diſco-"vered that a ſtar of Taurus has a declination of "two minutes, every twenty-four hours; that this "ſtar not being dim, and having no train, cannot "be conſidered as a comet, communicated their "obſervations to the Aſtronomers of Paris, who "found them accurate. M. *Meſſier* was appointed "to make a report of this to the Academy of "Sciences, at their next meeting *."

If the Stars are Suns, here then is a Sun in motion, and that motion is a preſumption, at leaſt, that ours may move.

* Extract from the Courier de l'Europe, Friday, 4th May, 1781.

The ſtability of the Earth may be preſumed, on the other hand, from this circumſtance, that the diſtance of the Stars never changes with reſpect to us, which muſt perceptibly take place, if we performed every year, as is alleged, a round of ſixty-four millions of leagues in diameter through the Heavens; for in a ſpace ſo vaſt, we muſt, of neceſſity, draw nigher to ſome, and remove from others.

Sixty-four millions of leagues, we are told, dwindle to a point in the Heavens, compared to the diſtance of the Stars. I am much in doubt as to the truth of this. The Sun, which is a million of times greater than the Earth, preſents an apparent diameter of only ſix inches, at the diſtance of thirty-two millions of leagues from us. If this diſtance reduces to a diameter ſo ſmall, a body ſo immenſe, it is impoſſible to doubt, that double the diſtance, namely, ſixty-four millions of leagues, would diminiſh it ſtill much more, and reduce it, perhaps, to the apparent magnitude of a Star; and it is far from being impoſſible, that, on being thus diminiſhed, and on our ſtill removing ſixty-four millions of leagues farther, he would entirely diſappear. How comes it to paſs, then, that when the Earth approaches, or removes to this diſtance from the Stars in the Firmament, in performing

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it's annual circle, no one of thoſe Stars increaſes or diminiſhes in magnitude with reſpect to us.

I ſubmit ſome farther obſervations, tending to prove, that the Stars have, at leaſt, motions peculiar to themſelves. The ancient Aſtronomers have obſerved, in the neck of the Whale, a Star which preſented much variety in it's appearances; ſometimes it appeared for three months together, ſometimes during a longer interval; ſometimes it's apparent magnitude was greater, ſometimes ſmaller. The time of it's appearances was irregular. The ſame Aſtronomers report, that they had obſerved a new Star in the heart of the Swan, which from time to time diſappeared. In the year 1600, it was equal to a Star of the firſt magnitude; it gradually diminiſhed, and at length diſappeared. M. *Caſſini* perceived it in 1655. It increaſed for five years ſucceſſively; it then began to decreaſe, and reappeared no more. In 1670 a new Star was obſerved near the head of the Swan. Father *Anſelm*, a Carthuſian friar, and ſeveral other Aſtronomers, made the obſervation. It diſappeared, and became again viſible in 1672. From that period, it was ſeen no more till 1709, and in 1713 it totally diſappeared.

Theſe examples demonſtrate, that the Stars not only have motions, but that they deſcribe curves

very different from the circles and the ellipſes which we have aſſigned to the heavenly bodies. I am fully perſuaded, that there is among theſe the ſame variety of motion, as between thoſe of many terreſtrial bodies; and that there are Stars which deſcribe cycloïds, ſpirals, and many other curves, of which we have not ſo much as an idea.

I muſt proceed no farther on this ground, for fear of appearing better informed reſpecting the affairs of Heaven, than thoſe which are much nearer to us. All that I intended was to expoſe my doubts and my ignorance. If Stars are Suns, then there muſt be Stars in motion; and, ſurely, ours may be in motion as well as they are *.

It

* I now leave the Reader to reflect on the total diſappearance of thoſe Stars. The Ancients had obſerved ſeven Stars in the Pleiades. Six only are now perceptible. The ſeventh diſappeared at the ſiege of Troy. *Ovid* ſays, it was ſo affected by the fate of that unfortunate city, as, from grief, to cover it's face with it's hand. I find, in the book of *Job*, a curious paſſage, which ſeems to preſage this diſappearance: it is chap. xxxviii. ver. 31. *Numquid conjungere valebis micantes ſtellas pleïadas, aut gyrum arcturi poteris diſſipare?* "Will it be in thy power to "unite the brilliant Stars, the Pleiades; and to turn aſide the "great Bear from it's courſe?" This is the import of the tranſlation of M. *le Maitre de Sacy*. However, if I might venture to give an opinion after that learned man, I would put a different ſenſe on the concluſion of the paſſage. *Gyrum arcturi diſſipare*, means, in my opinion, "to diſſipate the attraction of the arctic pole."

It is thus that our general maxims become the ſources of error; for we never fail to charge with diſorder whatever ſeems to recede from our pretended order. That which I formerly quoted, namely, that Nature, in her operations, takes always the ſhorteſt road, has filled our Phyſics with falſe views innumerable. There is nothing, however, more flatly contradicted by experience. Nature makes the waters of the rivers to meander through the Land, in their progreſs to the Sea, inſtead of tranſmitting them in a ſtraight line. She cauſes the veins to perform a winding courſe through the human body; nay, ſhe has perforated certain bones expreſsly, in order to afford a paſſage to ſome of the principal veins into the interior of the ſtronger limbs, to prevent their being expoſed to injury by external concuſſions. In a word, ſhe expands a muſhroom in one night, but takes a century to bring an oak to perfection. Nature very ſeldom takes the neareſt road, but ſhe always takes that which is beſt adapted to the purpoſe.

This rage for generalizing has dictated to us, in every branch of Science, an infinite number of

pole." I here repeat what I have already obſerved, that the Book of *Job* is repleniſhed with moſt profound knowledge of Nature.

maxims, ſentences, adages, which are inceſſantly contradicting themſelves. It is one of our maxims, that a man of genius catches every thing at a glance, and executes all by one ſingle Law. For my own part, I conſider this ſublime method of obſerving and executing, as one of the ſtrongeſt proofs of the weakneſs of the human mind. Man never can proceed with confidence but in one ſingle path. As ſoon as a variety preſent themſelves, he becomes perplexed, and goes aſtray; he is at a loſs to aſcertain which he ought to purſue: that he may make ſure of not deviating, he admits only one to be right; and, once engaged, right or wrong, pride ſtimulates him forward. The AUTHOR of Nature, on the contrary, embracing in his infinite intelligence, all the ſpheres of all beings, proceeds to their production by Laws as various as his own inexhauſtible conceptions, in order to the attainment of one ſingle end, which is their general good. Whatever contempt Philoſophers may expreſs for final cauſes, they are the only cauſes which he permits us to know. All the reſt He is pleaſed to conceal from us; and it is well worthy of being remarked, that the only end which He diſcloſes to our underſtanding, is alſo the ſame with that which he propoſes to our virtues.

One of our moſt ordinary methods, when we catch ſome effect in Nature, is to dwell upon it,

at firſt, from weakneſs, and afterwards, to deduce from it an univerſal principle, out of vanity. If after this we can find means, and it is no difficult matter to apply to it a geometrical theorem, a triangle, an equation, were it but an $a + b$, this is ſufficient to render it for ever venerable. It was thus that, in the laſt age, every thing was explained on the principles of the corpuſcular philoſophy, becauſe it was perceived that ſome bodies were formed by intus-ſuſception, or an aggregation of parts. A ſeaſoning of Algebra, which they found means to add to it, had inveſted it with ſo much the more dignity, that moſt of the reaſoners of thoſe times underſtood nothing of the matter. But being indifferently endowed, it's reign was of ſhort duration. At this day, we do not ſo much as mention the names of a long liſt of learned and illuſtrious gentlemen, whom all Europe then concurred in covering with laurels.

Others having found out that air preſſed, ſet to work with every ſpecies of machinery to demonſtrate that air poſſeſſed gravity. Our books referred every thing to the gravity of the air; vegetation, the human temperament, digeſtion, the circulation of the blood, the phenomena, the aſcenſion, of fluids. They found themſelves ſomewhat embarraſſed, it is true, by capillary tubes, in which the fluid aſcends, independently of the ac-

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tion of the air. But a ſolution was found for this likewiſe; and *woe betide* thoſe, in the phraſe of certain Writers, who do not comprehend it! Others applied themſelves to the inveſtigation of it's elaſticity, and have explained, equally well, all the operations of Nature, by this quality of the air. The univerſal cry was, now the veil is removed; we have caught her in the fact. But did not the Savage know, when he walked againſt the wind, that air had both gravity and elaſticity? Did he not employ both thoſe qualities in managing his canoe when under ſail? I do not object to inveſtigation, if natural effects are applied, after exact calculation, and unequivocal experiment, to the neceſſities of human life; but they are, for the moſt part, introduced for the purpoſe of regulating the operations of Nature, and not our own.

Others find it ſtill more commodious to explain the ſyſtem of the Univerſe, without deducing any conſequence from it. They aſcribe to it Laws which have ſo much accuracy and preciſion, that they leave to the divine Providence nothing more to do. They repreſent the Supreme Being as a Geometrician, or a Mechaniſt, who amuſes himſelf with making ſpheres, merely for the pleaſure of ſetting them a ſpinning round. They pay no regard to harmonies, and other moral cauſes. Though the exactneſs of their obſervations

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may do them honour, their reſults are by no means ſatisfactory. Their manner of reaſoning on Nature reſembles that of a Savage, who, on obſerving, in one of our cities, the motion of the indexes of a public clock, and ſeeing, that on their pointing in a certain direction upon the hour-plate, the turrets fell a ſhaking, crowds iſſued into the ſtreets, and a conſiderable part of the inhabitants were put in motion, ſhould thence conclude, that a clock was the principle of all European occupations. This is the defect to be imputed to moſt of the Sciences, which, without conſulting the end of the operations of Nature, perplex themſelves in an unprofitable inveſtigation of the means. The Aſtronomer conſiders only the courſe of the Stars, without paying the ſlighteſt attention to the relations which they have with the ſeaſons. Chemiſtry, having diſcovered in the aggregation of bodies only ſaline particles, which mutually aſſimilate, ſees nothing but ſalt as the principle and the object. Algebra, having been invented, in order to facilitate calculation, has degenerated into a Science which calculates only imaginary magnitudes, and which propoſes to itſelf theorems only, totally inapplicable to the demands of human life.

From all this reſults an infinity of diſorders, far beyond what I am able to expreſs. The view of Nature,

Nature, which ſuggeſts to Nations the moſt ſavage, not only the idea of a GOD, but that of an infinity of Gods, preſents to the Philoſophers of the day only the idea of furnaces, of ſpheres, of ſtills, and of cryſtallizations.

The Naïads, the Sylvans, Apollo, Neptune, Jupiter, impreſſed upon the Ancients ſome reſpect, at leaſt, for the Works of Creation, and attached them ſtill farther to their Country by a ſentiment of religion. But our machinery deſtroys the harmonies of Nature and of Society. The firſt is to us nothing but a gloomy theatre, compoſed of levers, pulleys, weights, and ſprings; and the ſecond merely a ſchool for diſputation. Thoſe ſyſtems, we are told, give exerciſe to the mental faculties. It may be ſo; but may they not likewiſe miſlead the underſtanding? But the heart is in no leſs danger of being depraved. While the head is laying down principles, the heart is frequently deducing conſequences. If every thing is the production of unintelligent powers, of attractions, of fermentations, the play of fibres, of maſſes, we then are ſubjected to their laws, as all other bodies are. Women and children deduce theſe conſequences. What, in the mean time, becomes of virtue? You muſt ſubmit, ſay theſe ingenious gentlemen, to the Laws of Nature. So then, we muſt obey the power of gravity; ſit down, and

walk

walk no more. Nature ſpeaks to us by a hundred thouſand voices. Which of theſe is now ſounding in our ears? What, will you adopt as the rule of your life, the example of fiſhes, of quadrupeds, of plants, or even of the heavenly bodies?

There are Metaphyſicians, on the contrary, who without paying regard to any one Law of Phyſics, explain to you the whole ſyſtem of the Univerſe, by means of abſtract ideas. But this is a proof that their ſyſtem is not the ſyſtem of Nature, namely, that with their materials and their method, it would be an eaſy matter to ſubvert their order, and to frame another totally different from it, provided one were diſpoſed to take the ſmall trouble which it requires. Nay, a reflection ariſes out of this, which levels a mortal blow at the pride of human underſtanding; it is this, that all theſe efforts of the genius of Man, ſo far from being able to conſtruct a World, are incapable of ſo much as putting a grain of ſand in motion.

There are others, who conſider the ſtate in which we live as a ſtate of progreſſive ruin and of puniſhment. They proceed on the ſuppoſition, conformably to the authority of the Sacred Writings, that this Earth once exiſted with other harmonies. I readily admit what Scripture ſays on this ſubject, but I object to the explanations of Commentators.

Commentators. Such is the weaknefs of our intellectual powers, that we are incapable of conceiving or imagining any thing beyond what Nature actually exhibits to us. They are grofsly miftaken, accordingly, when they affirm, for inftance, that, when the Earth was in a ftate of perfection, the Sun was conftantly in the Equator; that the days and nights were perpetually equal; that there was an eternal Spring; that the whole face of the ground was fmooth and level, and fo on.

Were the Sun conftantly in the Equator, I queftion whether a fingle fpot of the Globe would be habitable. Firft, the Torrid Zone would be burnt up by his fervent heat, as has been already demonftrated; the two icy Zones would extend much farther than they do at prefent; the temperate Zones would be at leaft as cold toward their middle, as they are with us at the vernal Equinox; and this temperature would prevent the greateft part of fruits from coming to maturity. I know not where the perpetual Spring would be; but, if it could any where exift, never could Autumn there exift likewife. The cafe would be ftill worfe were there neither rocks nor mountains on the furface of the Globe, for not one river, nay not a brook of water would flow over the whole Earth. There would be neither fhelter nor reflex,

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to the North, to cheriſh the germination of plants, and there would be neither ſhade nor moiſture, to the South, to preſerve them from the heat. Theſe wonderful arrangements actually exiſt in Finland, in Sweden, at Spitzberghen, and over the whole northern regions, which become loaded with rocks in proportion as the latitude increaſes; and they riſe, in like manner, in the Antilles, in the Iſle of France, and in all the other iſlands and diſtricts comprehended between the Tropics, where the face of the ground is covered over with rocks, eſpecially toward the Line; in Ethiopia, the territory of which Nature has overſpread with vaſt and lofty rocks, almoſt perpendicular, which form all around them deep valleys, delightfully ſhady and cool. Thus, as was before obſerved, in order to refute our pretended plans of perfection, it is ſufficient to admit them.

There is another claſs of Literati, on the contrary, who never deviate from their track, and who abſtain from looking at any thing beyond it, however rich in facts they may be: ſuch are the Botaniſts. They have obſerved the ſexual parts in plants, and employ themſelves entirely in collecting and arranging them, conformably to the number of thoſe parts, without troubling themſelves about knowing any thing farther of them. When they have claſſed them in their heads and in their

their herbals, into umbellated, into rofe-formed, or into tubulous, with the number of their ftamina; if to this they are able to affix a parcel of Greek terms, they are poffeffed, as they imagine, of the complete fyftem of vegetation.

Others of them, to do them juftice, go fomewhat farther. They ftudy the principles of plants; and in order to attain their object, pound them in mortars, or diffolve them in their alembics. The procefs being completed, they exhibit falts, oils, earths; and tell you gravely, thefe are the principles of fuch and fuch a plant. For my own part, I no more believe that any one can fhew me the principles of a plant in a phial, than he can difplay thofe of a wolf, or of a fheep, in a kettle. I refpect the myfterious operations of Chemiftry; but whenever they act on vegetables, the procefs deftroys them. Permit me to quote the decifion which an eminent Phyfician has pronounced on his own experiments. I mean Doctor *J. B. Chomel*, in the preliminary difcourfe to his ufeful Abridgment of the Hiftory of common Plants *. "Two thoufand analyfes nearly," fays he, "of different plants, made by the Chemifts "of the Royal Academy of Sciences, have afford-"ed us no farther information than this, that

* Vol. i. page 37.

"from

" from all vegetables may be extracted a certain " quantity of an acid liquor, more or leſs of eſ- " ſential or fetid oil, of ſalt fixed, volatile, or " concrete, of inſipid phlegm, and of earth; and, " in many caſes, almoſt the ſame principles, and " in the ſame quantities, from plants whoſe vir- " tues are extremely different. This very tedious, " and very painful purſuit, accordingly, has " turned out a merely uſeleſs attempt toward a " diſcovery of the effects of plants; and has ſerved " only to undeceive us, reſpecting the prejudices " which might have been entertained in favour of " ſuch an analyſis." He adds, that the celebrated Chemiſt *Homberg*, having ſown the ſeeds of the ſame plants in two frames, filled with earth, im-pregnated with a ſtrong lye, the one of which was afterwards watered with common water, and the other with water in which nitre had been diſſolved, theſe plants re-produced very nearly the ſame principles. Here, then, is our ſyſtematic Science completely overturned; for it can diſcover the eſ-ſential qualities of plants, neither by their compo-ſition nor their decompoſition.

Many other errors have been adopted reſpect-ing the Laws of the expanſion and the fecunda-tion of plants. The Ancients had diſtinguiſhed, in many plants, males and females; and a fecunda-tion, by means of emanations of the ſeminal pow-

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der, ſuch as in the date-bearing palm-tree. We have applied this Law to the whole vegetable kingdom. It embraces, no doubt, a very extenſive field ; but how many vegetables, beſides, propagate themſelves by ſuckers, by ſlips, by knittings, by the extremities of their branches! Here are, then, in the ſame kingdom, various methods of re-production. Nevertheleſs, when we perceive no longer in Nature, the Law which has once been adopted in our books of Science, we are weak enough to imagine that ſhe has gone aſtray. We have only one thread, and when it ſnaps, we conclude, that the ſyſtem of the Univerſe muſt be on the point of diſſolution. The Supreme Intelligence diſappears from before our eyes, the moment that our own happens to be a little diſturbed. I entertain no doubt, however, that the AUTHOR of Nature has eſtabliſhed Laws for the vegetable World, now ſo generally ſtudied, which are ſtill to us entirely unknown. I take the liberty to ſubjoin on this ſubject, an obſervation which I ſubmit to the experience of my Readers.

Having tranſplanted, in the month of February of the year 1783, ſome ſimple violet plants, which had begun to puſh out ſmall flower-buds ; this tranſplantation checked their expanſion in a manner very extraordinary. Theſe ſmall buds never came into flower, but their ovary having ſwelled, attained

attained the ufual fize, and changed into a capfula filled with feeds, without difplaying, outwardly or inwardly, either petal, or anthera, or ftigma, or any part whatever of the flower. All thefe buds prefented fucceffively the fame phenomena in the months of May, of June, and of July, but no one of thofe violet plants prefented the leaft femblance of a flower. I only perceived in the fhooting buds which I opened, the parts which fhould have compofed the flower withered within the calix. I fowed again their feeds which had not been fecundated, and hitherto they have not fprung up. This experiment fo far is favourable to the Linnæan fyftem; but it is in another refpect a deviation, as it demonftrates the poffibility of a plant's producing fruit without having flowered.

It may be here proper to remark, once for all, that phyfical Laws are fubordinate to the Laws of utility, that is, to give an inftance, the Laws of vegetation are adapted to the prefervation of fenfible beings, for whofe ufe they were defigned. Accordingly, though the flowering of my violet may have been interrupted, this prevented not the production of it's feeds, which were deftined to be the fubfiftence of fome animal, whofe natural food it is. For this reafon, too, the moft ufeful plants, fuch as the gramineous, are thofe which have the greateft variety of methods to re-produce them-

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ſelves. If Nature, with reſpect to them, had confined herſelf rigidly to the Law of florification, they could not multiply, when paſtured upon by animals which continually browze on their ſummits. The ſame thing takes place with regard to ſuch as grow along the water courſes, as reeds and the aquatic trees; willows, alders, poplars, oſiers, mangliers, when the waters ſwell, and bury them in ſand, or totally ſubvert them, as is frequently the caſe. The ſhores would remain deſtitute of verdure, if the vegetables, which are native there, had not the faculty of re-production by means of their own ſhoots. But the caſe is different with reſpect to the vegetable inhabitants of the mountains, as palm-trees, firs, cedars, larches, pines, which are not expoſed to ſimilar accidents, and which cannot be propagated by ſlips. Nay, if you crop off the ſummit of the palm-tree, it dies.

We likewiſe find theſe ſame laws of adaptation and utility in the generation of animals, to which we aſcribe uncertainty, as ſoon as we perceive variety; or when we apprehend an approximation to the vegetable kingdom by means of imaginary relations, ſuggeſted by the perception of effects common to both. Thus, for example, if ſome of our more delicate plant-inſects are viviparous in Summer, it is becauſe their young find, at that ſeaſon, the temperature and the food which are

adapted

adapted to them on coming into the world; and if they are oviparous in Autumn, it is becaufe the pofterity of creatures fo delicate could not have furvived the Winter, without having been fhut up in eggs. For fimilar reafons, if you tear off a claw from a live crab or lobfter, it pufhes out another, which fprings out of it's body, as a branch out of a tree. Not that this animal re-production is the effect of any mechanical analogy between the two kingdoms: but thofe animals being deftined to live on the fhores, among the rocks, where they are expofed to the agitation of the waves, Nature has beftowed on them the faculty of re-producing the limbs expofed to be bruifed, or broken off, by the rolling about of rocky fubftances, as fhe has given to vegetables, which grow by the waters, the power of re-production by fhoots, becaufe they are expofed to the danger of being overwhelmed by inundations.

Medicine has deduced a multitude of errors from thofe apparent analogies of the vegetable and animal kingdoms. It is fufficient to examine the train of her ftudies, to be fatisfied that they are liable to ftrong fufpicions. She purfues the operations of the foul through the ftructure of a corpfe, and the functions of life in the lethargy of death. If fhe happens to perceive fome valuable property in a vegetable, fhe exalts it into an uni-

verſal remedy. Liſten to her aphoriſms. Plants are uſeful to human life: hence ſhe concludes, that a vegetable diet will make a man live for ſeveral ages. Who is able to enumerate the books, the treatiſes, the panegyrics, which have been compoſed on the virtues of plants! Multitudes of patients die, notwithſtanding, with their ſtomachs full of thoſe wonderful ſimples. Not that I undervalue their qualities when judiciouſly applied; but I abſolutely reject the reaſonings which attempt to connect the duration of human life with the uſe of a vegetable regimen.

The life of Man is the reſult of all the moral adaptations, and depends much more on ſobriety, on temperance, and the other virtues, than on the nature of aliments. The animals which live entirely on plants, do they attain even ſo much as the age of Man? The deer and wild goats, which feed on the admirable vulnerary herbs of Switzerland ought never to die; nevertheleſs, they are very ſhort-lived. The bees which ſuck the nectar of their flowers, likewiſe die, and ſeveral of their ſpecies, in the ſpace of one year. There is a limited term fixed for the life of every kind of animal, and a regimen peculiar to it; that of Man alone extends to every variety of aliment. The Tartar lives on raw horſe-fleſh, the Dutchman on fiſh, another nation on roots, another on milk diet;

diet; and in all countries you meet with old people. Vice alone, and mental uneaſineſs, ſhorten human life; and I am perſuaded, that the moral affections are of ſuch extenſive influence, with reſpect to Man, that there is not one in the whole catalogue of diſeaſes but what owes it's origin to them.

Hear what *Socrates* thought of the ſyſtematic Philoſophy of his age; for in all ages, ſhe has abandoned herſelf to the ſame extravagancies. "He did not amuſe himſelf," ſays *Xenophon* *, "with reſearches into the myſteries of Nature; "or with enquiring in what manner, that which "the Sophiſts call the World was created; nor "what irreſiſtible elaſtic force governs all celeſtial "things: on the contrary, he expoſed the folly "of thoſe who addict themſelves to ſuch contem-"plations, and demanded, if it was after having "acquired a perfect knowledge of human things, "that they undertook the inveſtigation of thoſe "which are divine; or whether they conſidered "it as a character of true wiſdom, to neglect "what was within their reach, in order to graſp "at objects far above them. He expreſſed ſtill "farther aſtoniſhment, that they did not diſcern "the impoſſibility of Man's comprehending all

* *Xenophon*'s Memorable Things of *Socrates*, book i.

" thoſe wonders, conſidering that the perſons who " had the reputation of being moſt profoundly " ſkilled in ſuch matters, maintained opinions " contradictory to each other, and quarrelled like " madmen. For as among madmen, there are " ſome undaunted at the approach of the moſt " formidable calamities, and others affrighted " where there is no appearance of danger; in " like manner, among thoſe Philoſophers, ſome " have maintained, that there is no action which " may not be performed in public, nor a word " which may not be freely ſpoken in the preſence " of the whole World; others, on the contrary, " have taught, that all intercourſe with men ought " to be broken off, and perpetual ſolitude prefer- " red to ſociety: ſome have poured contempt on " temples and altars, and decried the worſhip of " the Gods; others are ſuch ſlaves to ſuperſtition, " as to adore wood, and ſtone, and irrational ani- " mals. And as to the Science of natural things, " ſome have acknowledged but one ſingle being; " others have admitted an infinite nnmber: ſome " inſiſt, that all things are in a ſtate of perpetual " motion; others, that there is no ſuch thing as " motion: ſome tell you that the World is filled " with inceſſant generations and diſſolutions; and " others aſſure you that nothing is generated or " deſtroyed. He ſaid farther, that he would be " gladly informed by thoſe ingenious gentlemen,

" whether

"whether they entertained the hope of ſome time "or other reducing to practice what they taught, "as perſons inſtructed in any art, have it in their "power to exerciſe it at pleaſure, either for their "own private emolument, or for the benefit of "their friends; and whether they likewiſe ima-"gined, after they had diſcovered the cauſes of "every thing that comes to paſs, that they ſhould "be able to diſpenſe winds and rains, and diſpoſe "of times and ſeaſons, in ſubſerviency to their "neceſſities; or if they ſatisfied themſelves with "the bare knowledge of thoſe things, without any "expectation of advantage from them."

Not that *Socrates* was unacquainted with Nature, for he had ſtudied her thoroughly; but he had relinquiſhed the inveſtigation of the cauſes, entirely in the view of riſing into admiration at the reſults. No one ever had collected more obſervations on this ſubject than he had done. He made frequent uſe of theſe in his converſations on the divine Providence.

Nature preſents to us, on every ſide, nothing but harmonies, and adaptations to our neceſſities; and we will obſtinately perſiſt in vain efforts to trace her up to the cauſes which ſhe employs; as if we meant to extort from her the ſecrets of her power. We do not ſo much as know the moſt

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common principles which ſhe ſets a working in our hands, and in our feet. Earth, water, air, and fire, are elements, as we ſay. But under what form muſt Earth appear, in order to be an element? That ſtratum called *humus*, which almoſt every where covers it, and which ſerves as a baſis to the vegetable kingdom, is a refuſe of all ſorts of ſubſtances, of marl, of ſand, of clay, of vegetables.

Is it the ſand which conſtitutes it's elementary part? But ſand appears to be a ſecretion from the rock. Is it the rock, then, which is an element? But it has the appearance, in it's turn, of being an aggregation of ſand, as we ſee it to be in maſſes of free-ſtone. Whether of the two, ſand or rock, was the principle of the other? and which took the precedency in the formation of the Globe? Suppoſing us poſſeſſed of authentic information as to this particular, what ground have we gained? There are rocks formed of aggregations of all ſorts. Granite is compoſed of grains; marbles and calcareous ſtones, of the paſte of ſhells and madrépores. There are likewiſe banks of ſand, compoſed of the wreck of all theſe ſtones: I have ſeen the ſand of cryſtal.

Shell-fiſh, which ſeem to give us ſome light reſpecting the nature of calcareous ſtone, by no means

means indicate to us the primitive origin of that ſubſtance; for they themſelves form their ſhells of the refuſe that ſwims in the Seas. The difficulties increaſe as you attempt to explain the formation of ſo many various bodies iſſuing out of the Earth, and nouriſhed by it. In vain you call to your aſſiſtance analogies, aſſimilations, homogeneïties, and heterogeneïties. Is it not ſtrange, that thouſands of ſpecies of reſinous, oily, elaſtic, ſoft, and combuſtible vegetables, ſhould differ ſo entirely from the rugged and ſtony ſoil which produces them?

The Siameſe Philoſophers eaſily get rid of all embarraſſment on the ſubject, for they admit, in Nature, a fifth element, which is wood. But this ſupplement is incapable of carrying them very far; for it is ſtill more aſtoniſhing, that animal ſubſtance ſhould be formed of vegetable, than that this laſt ſhould be formed of foſſil. Which way does it become ſenſible, living, and impaſſioned? They admit, I grant, the interpoſition of the Sun's action. But how is it poſſible that the Sun ſhould be, in animals, the cauſe of any moral affection; or, if you like the phraſe better, of any paſſion, when we do not ſee it exerciſing a diſpoſing influence even on the component parts of plants? For example, it's general effect is to dry that which is humid. How comes it to paſs, then,

that in a peach expoſed to it's action, the pulp externally ſhould be meltingly plump, and the nut within extremely hard; whereas the contrary takes place in the fruit of the cocoa-tree, which is repleniſhed with milk inwardly, and clothed externally with a ſhell as hard as a ſtone?

Neither has the Sun more influence on the mechanical conſtruction of animals: their interior parts, which are moſt conſtantly moiſtened with humours, with blood and marrow, are frequently the hardeſt, ſuch as the teeth and the bones; and the parts moſt expoſed to the action of his heat are often very ſoft, as hair, feathers, the fleſh, and the eyes. Once more, how comes it to paſs, that there is ſo little analogy between plants tender, ligneous, liable to putrefaction, and the Earth which produces them; and between the corals and the madrépores of ſtone, which form banks ſo extenſive between the Tropics, and the ſea-water in which they are formed? To all appearance, the contrary ought to happen: the water ought to have produced ſoft plants, and the earth ſolid plants. If things exiſt thus, there muſt, undoubtedly, be more than one good reaſon for it; I think I have a glimpſe of a very tolerable one: it is this, that if theſe analogies actually took place, the two elements would in a ſhort time become uninhabitable; they would ſoon be overwhelmed by

by their own vegetation. The Sea would be incapable of breaking madrépores of wood, and the air of diffolving forefts of ftone.

The fame doubts might be ftarted, refpecting the nature of Water. This element, we allege, is formed of fmall globules, which roll one over another; that it is to the fpherical form of it's elementary particles we ought to afcribe it's fluidity. But if thefe are globules, there muft be between them intervals and vacuities, without which they could not be fufceptible of motion. How comes it to pafs, then, that water is incompreffible? If you apply to it a ftrong compreffing power in a tube, it will force it's way through the pores of that tube, though it be of gold; and will burft it, if of iron. Employ what efforts you pleafe, you will find it impoffible to reduce it to a fmaller fize. But fo far from knowing the form of it's component parts, we cannot fo much as determine that of the combined whole. Does it confift in being expanded into invifible vapours in the air, as the dew, or collected into mift in the clouds, or confolidated into maffes in the ice, or finally, in a fluid ftate, as in the rivers. Fluidity, it is faid, forms one of it's principal characters. Yes, becaufe we drink it in that ftate, and becaufe, under this relation, it interefts us the moft. We determine it's principal character, as we do that of all

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the objects of Nature, for the reaſon which I have already ſuggeſted, from our own moſt craving neceſſity; but this very character appears foreign to it: for it owes it's fluidity only to the action of the heat; if you deprive it of this, it changes into ice. It would be very ſingular, ſhould it be made to appear, after all our fundamental definitions, that the natural ſtate of water was to be ſolid, and that the natural ſtate of earth was to be fluid: now this muſt actually be the caſe, if water owes it's fluidity only to heat, and if earth is nothing but an aggregation of ſands united by different glues, and attracted to a common centre, by the general action of gravity.

The elementary qualities of air, are not of more eaſy determination. Air, we ſay, is an elaſtic body: when it is ſhut up in the grains of gunpowder, the action of fire dilates it to ſuch a degree, as to communicate to it the power of hurling a globe of iron to a prodigious diſtance. But how could it have been, with all this elaſticity, compreſſed into the grains of a crumbling powder? If you put even any liquid ſubſtance into a ſtate of fermentation in a flaſk, a thouſand times more air will be ſeparated from it, than you could force into the veſſel without breaking it. How could this air be confined in a ſubſtance ſoft and fluid, without diſengaging itſelf by its own action?

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The air when loaded with vapours, we farther ſay, is refrangible. The farther we advance to the North, the more elevated does the Sun appear over the Horizon, above the place which he actually occupies in the Heavens. The Dutch mariners, who paſſed the Winter of 1597, in Nova-Zembla, after a night of ſeveral months, ſaw the Sun re-appear fifteen days ſooner than they expected his return. All this is very well. But if vapours render the air refrangible, why is there no Aurora, nor twilight, nor any durable refraction of light whatever, between the Tropics, not even on the Sea, where ſo many vapours are exhaled, by the conſtant action of the Sun, that the Horizon is ſometimes quite involved in miſt by them.

The light is not refracted, ſays another Philoſopher, by the vapours, but by the cold; for the refraction of the Atmoſphere is not ſo great at the end of Summer, as at the end of Winter, at the autumnal Equinox, as at the vernal.

I admit the truth of this obſervation; however, after very hot days in Summer, there is refraction to the North, as well as in our temperate Climates, and there is none between the Tropics: the cold, therefore, does not appear to me to be the mechanical cauſe of refraction, but it is the final cauſe of it.

it. This wonderful multiplication of light, which increaſes in the Atmoſphere, in proportion to the intenſeneſs of the cold, is, in my apprehenſion, a conſequence of the ſame Law which tranſmits the Moon into the northern ſigns, in proportion as the Sun forſakes them, and which cauſes her to illuminate the long nights of our Pole, while the Sun is under the Horizon; for light, be of what ſort it may, is warm. Theſe wonderful harmonies are not in the nature of the Elements, but in the will of HIM who has eſtabliſhed them in ſubordination to the neceſſities of beings endowed with ſenſibility.

Fire preſents to us phenomena ſtill more incomprehenſible. Firſt of all, Is fire matter? Matter, according to the definitions of Philoſophy, is that which is diviſible in length, breadth, and depth. Fire is diviſible only in perpendicular length. Never will you divide a flame, or a ray of the Sun, in it's horizontal breadth. Here, then, is matter diviſible only in two dimenſions. Beſides, it has no gravity, for it continually aſcends; nor levity, for it deſcends, and penetrates bodies ever ſo much below it. Fire, we are told, is contained in all bodies. But, being of a conſuming nature, How does it not devour them? How can it remain in water without being extinguiſhed?

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Theſe difficulties, and ſeveral others, induced *Newton* to believe that fire was not an element, but certain ſubtile matter put in motion. Friction, it is true, and colliſion, elicit fire from ſeveral bodies. But how comes it, that air and water, though agitated ever ſo much, never catch fire? Nay, How comes it that water even gets cold by motion, though it's fluidity is entirely owing to it's being impregnated by fire? Contrary to the nature of all other motions, Wherefore does that of fire go on in a conſtant ſtate of propagation, inſtead of meeting a check. All bodies loſe their motion by communicating it. If you ſtrike ſeveral billiard balls with one, the motion is communicated among them, it is divided and loſt. But a ſingle ſpark of fire diſengages from a piece of wood, the igneous particles, or the ſubtile matter if you will, which are contained in it, and the whole together increaſe their rapidity to ſuch a degree, as to make one vaſt conflagration of a whole foreſt.

We are not better acquainted with the negative qualities. Cold, they tell us, is produced by the abſence of heat: but if cold is merely a negative quality, How is it capable of producing poſitive effects? If you put into water a bottle of iced wine, as I have ſeen done in Ruſſia, oftener than once,

once, you ſee, in a ſhort time, ice of an inch in thickneſs cover the outſide of the bottle. A block of ice diffuſes cold all over the ſurrounding atmoſphere. Darkneſs, nevertheleſs, which is a privation of light, diffuſes no obſcurity over ſurrounding light. If you open, in a day of Summer, a grotto at once dark and cool, the ſurrounding light will not be in the leaſt impaired by the darkneſs which it contained; but the heat of the adjacent air will be perceptibly diminiſhed by the cold air which iſſues from it. I am aware of the reply; it will be ſaid, if there is no perceptible obſcuration in the firſt caſe, it is owing to the extreme rapidity of light, which replaces the darkneſs; but this would be increaſing the difficulty, inſtead of removing it, by ſuppoſing that darkneſs, too, has poſitive effects, which we have not time now to animadvert upon.

It is, however, on ſuch pretended fundamental principles, that moſt of our ſyſtems of Phyſics are reared. If we are in an error, or in a ſtate of ignorance, at the point of departure, it cannot be long before we go aſtray on the road; and it is really incredible with what facility, after having laid down our principles ſo ſlightly, we repay ourſelves in conſequences, in vague terms, and in contradictory ideas.

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I have ſeen, for example, the formation of thunder explained, in highly celebrated phyſical tracts. Some demonſtrate to you, that it is produced by the colliſion of two clouds, as if clouds, or foggy vapours, ever could produce a colliſion! Others gravely tell you, that it is the effect of the air dilated by the ſudden inflammation of the ſulphur and of the nitre which float in the air. But, in order to it's being capable of producing it's tremendous exploſions, we are under the neceſſity of ſuppoſing, that the air was confined in a body which made ſome reſiſtance. If you ſet fire to a great maſs of gun-powder in an unconfined ſituation, no exploſion follows. I know very well that the detonation of thunder has been imitated, in the experiment of fulminating powder; but the materials employed in the compoſition of it have a ſort of tenacity. They undergo, on the part of the iron ladle which contains them, a reſiſtance againſt which they ſometimes act with ſo much violence as to perforate it. After all, to imitate a phenomenon is not to explain it. The other effects of thunder are explained with ſimilar levity. As the air is found to be cooler after a thunder-ſtorm, the nitre, we are told, which is diffuſed through the Atmoſphere, is the cauſe of it; but was not that nitre there before the exploſion, when we were almoſt ſuffocated with heat? Does nitre cool only when it is ſet on fire? According to this mode of

reckoning,

reckoning, our batteries of cannon ought to become glaciers in the midſt of a battle, for a world of nitre is kindled into flame on ſuch occaſions; they are under the neceſſity, however, of cooling the cannon with vinegar; for, after having been fired off twenty times, in quick ſucceſſion, it is impoſſible to apply your hand to the piece. The flame of the nitre, though inſtantaneous, powerfully penetrates the metal, notwithſtanding it's thickneſs and ſolidity.

The heat, it is true, may likewiſe be occaſioned by the interior vibration of the parts. Whatever may be in this, the cooling of the air, after a thunder-ſtorm, proceeds, in my opinion, from that ſtratum of frozen air which ſurrounds us, to the height of from twelve to fifteen hundred fathoms; and which, being divided and dilated at it's baſe, by the fire of the ſtormy clouds, flows haſtily into our Atmoſphere. It's motion determines the fire of the thunder, to direct itſelf, contrary to it's nature, toward the Earth. It produces ſtill farther effects, which neither time nor place permit me at preſent to unfold.

It was affirmed, in the laſt age, that the Earth was drawn out at the Poles; and we are now poſitively told, that it is flattened there. I ſhall not at preſent enter into an examination of the principles

ciples from which this laſt concluſion has been deduced, and the obſervations on which it has been ſupported. The flattening of the Earth at the Poles has been accounted for from a centrifugal force, to which likewiſe it's motion through the Heavens has been aſcribed; though this pretended force, which has increaſed the diameter of the Earth at the Equator, has not the power of raiſing ſo much as a ſtraw into the air.

The flattening of the Poles, they tell us, has been aſcertained, by the meaſurement of two terreſtrial degrees, made at a vaſt expenſe, the one in Peru, near the Equator, and the other in Lapland, bordering upon the polar Circle *. Thoſe experiments were made, undoubtedly, by men of very great capacity and reputation. But perſons of at leaſt equal capacity, and of a name as high in the republic of Science, had demonſtrated, upon other principles, and by other experiments, that the Earth was lengthened at the Poles. *Caſſini* eſtimates at fifty leagues, the length by which the axis of the Earth exceeds it's diameters, which gives to each of the Poles twenty-five leagues of elevation over the circumference of the Globe. We

* It is evident, that the concluſion, from thoſe very meaſurements, ought to have been, that the Earth is lengthened at the Poles. See the Explanation of the Plates in vol. i.

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ſhall certainly enliſt under the banner of this illuſtrious Aſtronomer, if we conſider the teſtimony of the eye as of any weight; for the ſhade of the Earth appears oval over it's Poles, in central eclipſes of the Moon, as was obſerved by *Tycho Brhaé* and *Kepler*. Theſe names are a hoſt in themſelves.

But without conſidering any name as an authority, where natural truths are concerned, we may conclude, from ſimple analogies, the elongation of the axis of the Earth. If we conſider, as has been already ſaid, the two Hemiſpheres as two mountains, whoſe baſes are at the Equator, the ſummits at the Poles, and the Ocean, which alternately flows from one of theſe ſummits, as a great river deſcending from a mountain, we ſhall have, under this point of view, objects of compariſon which may aſſiſt us in determining the point of elevation from which the Ocean takes it's riſe, by the diſtance of the place where it's courſe terminates. Thus the ſummit of Chimboraco, the moſt elevated of the Andes of Peru, out of which the river of the Amazons iſſues, having a league and one-third nearly of elevation, above the mouth of that river, which is diſtant from it, in a ſtraight line, about twenty-ſix degrees, or ſix hundred and fifty leagues, it may be thence concluded, that the ſummit of the Pole muſt be elevated above the circumference

circumference of the Earth nearly five leagues, in order to have a height proportioned to the courſe of the Ocean, which extends as far as the Line, ninety degrees diſtant, that is to ſay, two thouſand, two hundred and fifty leagues, in a ſtraight line.

If we farther conſider, that the courſe of the Ocean does not terminate at the Line, but that when it deſcends in Summer from our Pole, it extends beyond the Cape of Good-Hope, as far as to the eaſtern extremities of Aſia, where it forms the current known by the name of the weſterly Monſoon, which almoſt encompaſſes the Globe, under the Equator, we ſhall be under the neceſſity of aſſigning to the Pole, from which it takes it's departure, an elevation proportioned to the courſe which it is deſtined to perform, and of tripling, at leaſt, that elevation, in order to give it's waters a ſufficient declivity. I put it down, then, at fifteen leagues: and if to this height we add that of the ices which are there accumulated, the enormous pyramids of which over icy mountains, have ſometimes an elevation of one-third above the heights which ſupport them, we ſhall find that the Pole can hardly have leſs than an elevation of the twenty-five leagues above the circumference which *Caſſini* aſſigned to it.

Obelifks of ice ten leagues high, are not difpro-portioned to the centre of cupolas of ice two thou-fand leagues in diameter, which, in Winter, cover our northern Hemifphere; and which have like-wife, in the fouthern Hemifphere, in the month of February, that is, in the very Midfummer of that Hemifphere, prominent borders, elevated like promontories, and three thoufand leagues, at leaft, in circumference, according to the relation of Cap-tain *Cook*, who coafted round them in the years 1773 and 1774.

The analogy which I eftablifh between the two Hemifpheres of the Earth, the Poles, and the Ocean which flows from them, and two mountains, their peaks, and the rivers which there have their fources, is in the order of the harmonies of the Globe, which exhibits a great number of fimilar harmonies on a fmaller fcale in the Continents, and in moft iflands, which are Continents in mi-niature.

It would appear, that Philofophy has, in all ages, affected to find out very obfcure caufes, in order to explain the moft common effects, in the view of attracting the admiration of the vulgar, who, in fact, fcarcely ever admire any thing but what they do not comprehend. She has not failed

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to take the advantage of this weaknefs of mankind, by infolding herfelf in a pompofity of words, or in the myfteries of Geometry, the better to carry on the deception. For how many ages did fhe ring in our fchools, the horror of a *vacuum* which fhe afcribed to Nature? How many fagacious pretended demonftrations of this have been given, which were to crown their authors with never-fading laurels, but which are now gone to the land of forgetfulnefs?

She difdains, on the other hand, to dwell on fimple obfervations, which bring down to the level of every capacity, the harmonies which unite all the kingdoms of Nature. For example, the Philofophy of our day refufes to the Moon all influence over vegetables and over animals. It is, neverthelefs, certain, that the moft confiderable growth of plants takes place in the night-time; nay, that there are feveral vegetables which flower only during that feafon; that numerous claffes of infects, birds, quadrupeds, and fifhes, regulate their loves, their hunting matches, and their peregrinations according to the different phafes of the orb of night. But what, degrade Philofophers to the experience of gardeners and fifhermen! What, condefcend to think and talk like fuch groundlings!

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If Philoſophy denies the influence of the Moon over the minuter objects of the Earth, ſhe makes it up amply, by conferring on her a very extenſive power over the Globe itſelf, without being over-ſcrupulous about the ſelf-contradiction. She affirms, that the Moon, in paſſing over the Ocean, preſſes upon it, and thus occaſions the flux of the tides on it's ſhores. But how is it poſſible that the Moon ſhould compreſs our Atmoſphere, which only extends, they ſay, to a ſcore of leagues, at moſt, from us? Or, admitting a ſubtile matter, and poſſeſſed of great elaſticity, which ſhould extend from our Seas as far as to the globe of the Moon, how could this matter be compreſſed by it, unleſs you ſuppoſe it confined in a channel? Muſt it not, in it's actual ſtate, extend to the right and to the left, while the action of the planet found it impoſſible to make itſelf felt on any one determinate point of the circumference of our Globe?

Beſides, why does not the Moon act on lakes, and ſeas of ſmall extent, where there are no tides? Their ſmallneſs ought no more to exempt them from the influence of her gravitation, than deprive them of the benefit of her light. Why are tides almoſt imperceptible in the Mediterranean? Wherefore do they undergo, in many places, intermittent movements, and retardations of two or three days? Wherefore, in a word, toward the North,

do

do they come from the North, from the Eaſt, or from the Weſt, and not from the South, as was obſerved, with ſurprize, by *Martens*, *Barents*, *Linſchotten* and *Ellis*, who expected to ſee them come from the Equator, as on the coaſts of Europe?

The principal movements of the Sea, it muſt be allowed, take place, in our Hemiſphere, at the ſame times with the principal phaſes of the Moon; but we ought not from thence to conclude their neceſſary dependance, and ſtill leſs explain it by Laws which are not demonſtrated. The Currents and the Tides of the Ocean proceed, as I think I have proved, from the effuſion of the ices of the Poles; which depend, in their turn, on the variety of the courſe of the Sun, as he approaches leſs or more toward either Pole: and as the phaſes of the Moon are themſelves regulated by the courſe of the Orb of Day, this is the reaſon why both take place at the ſame time.

Farther, the Moon when full has, as we have already obſerved, an effective and evaporating warmth: ſhe muſt act, therefore, on the polar ices, eſpecially when at the full *. The Academy

* This obſervation was made more than ſixteen hundred years ago. "The Moon produces thaw; diſſolving all ices "and froſt by the humidity of her influence." *Pliny's Natural Hiſtory. Book ii. chap.* 101.

of

of Sciences formerly maintained that her light did not warm, after experiments made on her rays, and on the ball of a thermometer, with a burning mirror. But this is not the firſt error into which we have been betrayed by our books and our machinery, as we ſhall ſee when we come to ſpeak of the decompoſition of the ſolar ray by the priſm. Neither is it the firſt time that an aſſembly of Literati have, without examination, adopted an opinion on the authority of perſons who made experiments with much formality and ſtatelineſs. And this is the way that errors get into vogue. The one in queſtion has, however, been completely refuted, firſt at Rome, and afterward at Paris, by a very ſimple experiment. Some one took a fancy to expoſe a veſſel full of water to the light of the Moon, and to place one ſimilar to it in the ſhade. The water in the firſt veſſel was evaporated much ſooner than that in the ſecond.

To no purpoſe do we exert all our induſtry and ingenuity; we can lay hold of nothing in Nature, except reſults and harmonies: firſt principles univerſally eſcape us. And, what is worſt of all, the methods of our Sciences have exerciſed a pernicious influence on our morals and on religion. It is very eaſy to miſlead men with reſpect to an intelligence which governs all things, when nothing is preſented to them as firſt cauſes but mechanical

means

means. Alas! it is not by these that we shall be able to find our way toward that Heaven, which we pretend to know so well. The greatest of Mankind have cast an eye thitherward as their last asylum. *Cicero* flattered himself with the hope of being, after death, an inhabitant of the Stars; and *Cesar*, from that elevation, to preside over the destiny of Rome. An infinite number of other men have limited their future happiness to a superintendance of mausoleums, groves, fountains; and others to a re-union with the objects of their loves. As for us, what are we now hoping for from Earth and from Heaven, where we see nothing beyond the levers of our pitiful machines?

How! as the reward of our virtues, is our destination to mount no higher than this, to be confounded with the elements! What, thy soul, O sublime *Fenelon!* to be exhaled in inflammable air; and to have had on the Earth the sentiment of an order which did not exist even in the Heavens! How, among those Stars so luminous, is there nothing but material Globes; and in their motions, so constant and so varied, nothing but blind attractions? How! Every thing around us insensible matter and no more; and intelligence given to Man, who could give himself nothing, only to render him miserable! How! and can we have been deceived by the involuntary sentiment which

which makes us raiſe our eyes to Heaven, in the agony of ſorrow, there to ſolicit relief! The animal on the point of cloſing his career, abandons himſelf to his natural inſtincts. The ſtag at bay ſeeks refuge in the moſt ſequeſtered ſpot of the foreſts, content to yield up the roving ſpirit which animates him, under their hoſpitable ſhades. The dying bee forſakes the flowers, returns to expire at the door of her hive, and to bequeath her ſocial inſtinct to her beloved Republic. And Man, following the bent of his reaſoning powers, can he no where find, in the widely extended univerſe, any thing worthy of receiving his departing ſighs; not even inconſtant friends, nor ſelfiſh kindred, nor an ungrateful Country, nor a ſoil ſtubborn to all his labours, nor a Heaven indifferent to crimes and to virtue?

Ah! it is not thus that Nature has apportioned her gifts. We bewilder ourſelves with our vain Sciences. By driving the reſearches of our underſtanding up to the very principles of Nature, nay, of DEITY, we have ſtifled, in the heart, all feeling of both the one and the other. The ſame thing has befallen us which once befel a peaſant who was living happily in a little valley in the heart of the Alps. A brook, which deſcended from thoſe mountains, fertilized his garden. For a long time he adored, in tranquillity, the benefi-

cent

cent Naïad who kept his ſtream perpetually flowing; and who increaſed it's quantity and it's coolneſs as the Summer's heat increaſed. One day a fancy ſtruck him, that he would go and diſcover the place where ſhe concealed her inexhauſtible urn. To prevent his going aſtray, he begins with purſuing upward the track of his rivulet. By little and little he riſes upon the mountain. Every ſtep he takes, in aſcending, diſcovers to him a thouſand new objects; plains, foreſts, rivers, kingdoms, boundleſs Oceans. Tranſported with delight, he proceeds in flattering hope of ſpeedily reaching the bleſſed abode where the Gods preſide over the deſtiny of this World. But, after a painful ſcramble, he arrives at the bottom of a tremendous glacier. He no longer ſees any thing around him but miſts, rocks, torrents, precipices. All, all has vaniſhed. Sweet and tranquil valley, humble roof, beneficent Naïad! his patrimony is now reduced to a cloud, and his divinity to an enormous maſs of ice.

It is thus that Science has conducted us through ſeductive paths, to a termination ſo fearful. She drags after her, in the train of her ambitious reſearches, that ancient malediction pronounced againſt the firſt man who ſhould dare to eat the fruit of her forbidden tree *, " Behold, the man

* Geneſis, chap. iiii. ver. 22.

is

" is become as one of us, to know good and evil." He ſhall not, therefore, " put forth his hand, " and take alſo of the tree of life, and eat, and live " for ever." What literary, political, and religious ſquabbles have our pretended Sciences excited! How many men has ſhe prevented from living even a ſingle day!

The ſublime genius and the pure ſpirit of *Newton*, aſſuredly, could not have ſtood ſtill at the boundary preſcribed to a vulgar mind. On obſerving the clouds reſorting from every quarter to the mountains which ſeparate Italy from the reſt of Europe, he would have inferred the attraction of their ſummits, and the direction of their chains, conformably to the baſons of the Seas, and to the courſes of the winds: he would thence have inferred equivalent diſpoſitions for the different ſummits of the Continent and of the Iſlands: he would have ſeen the vapours ariſing out of the boſom of the Seas of America, and conveying, through the air, fecundity to the centre of Europe, fixing themſelves in ſolid ice on the lofty pinnacles of the rocks, in order to cool the Atmoſphere of hot countries; undergoing new combinations, to produce new effects; and returning in a fluid ſtate, to waſh their former ſhores, diffuſing, in their myſterious progreſs, unlimited abundance, in a thouſand different channels. He would have obſerved,

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with admiration, the conſtant impulſion communicated to ſo many various movements, by the action of one ſingle luminary, the Sun, placed at the diſtance of thirty-two millions of leagues: and, inſtead of fruitleſsly rambling after the habitation of a Naïad, at the ſummit of the Alps, he would have proſtrated himſelf before that GOD, whoſe providence embraces the concerns of a whole Univerſe.

In order to ſtudy Nature with underſtanding, and to advantage, all the parts muſt be viewed in their harmony and connection. For my part, I, who do not pretend to be a *Newton*, am determined never to leave the borders of my rivulet, I ſhall ſet up my reſt in my humble valley, and employ myſelf in culling ſome herbs and flowers; happy if I am able to form of them ſome garlands to decorate the entrance of that ruſtic Temple, which my feeble hands have preſumed to rear to the Majeſty of Nature! *

* The ſyſtem of the harmonies of Nature, which I am proceeding to unfold, is, in my opinion, the only one which is within the reach of Man. It was firſt diſplayed by *Pythagoras* of Samos, who was the father of Philoſophy, and the founder of that ſect of Philoſophers who have been tranſmitted to us by the name of Pythagoreans. Never did a ſucceſſion of men ariſe ſo enlightened, as thoſe Sages were, in the natural Sciences; and none whoſe diſcoveries reflect higher honour on the

the human underſtanding. There exiſted, at that time, Philoſophers, who maintained that water, fire, air, atoms, were the principles of things. *Pythagoras* inſiſted, in oppoſition to this doctrine, that the principles of things were the adaptations and the proportions of which the harmonies were compoſed, and that goodneſs and intelligence conſtituted the nature of GOD.

He was the firſt who gave to the Univerſe the epithet of κόσμος, *mundus*, becauſe of it's order. He maintained that it was governed by a Providence; a ſentiment perfectly conformable to the tenor of our Sacred Books, and to experience. He invented the five Zones, and the obliquity of the Zodiac. He taught that the Torrid Zone was habitable. He aſcribed earthquakes to the water. In fact, their focuſes, as well as thoſe of volcanos, as we have already indicated, are always in the vicinity of the Sea, or of ſome great lake. He believed that each of the Stars was a World, containing an Earth, an Air, and a Heaven; and even in his time, this had been an anciently received opinion; for it is to be found in the verſes of *Orpheus*. Finally, he diſcovered the ſquare of the hypothenuſe, which has ſerved as a baſis to an infinite number of geometrical theorems and ſolutions.

Philolaüs, of Crotona, one of his diſciples, maintained, that the Sun received the fire diffuſed over the Univerſe, and reverberated it, which affords a better explanation of his nature than the perpetual emanations of light and heat which we aſcribe to him, without reparation, and without exhauſtion. He held that Comets were Stars, which re-appeared after a certain revolution. *Æcetes*, another Pythagorean, maintained the exiſtence of two Continents, that which we inhabit, and one oppoſite to it; an idea applicable only to America.

Theſe Philoſophers believed, that the ſoul of Man was a harmony compoſed of two parts; the one reaſonable, the other

irrational.

irrational. They placed the firſt in the head, and the other round the heart. They contended for it's immortality; and taught, that at the death of the man, his ſoul returned to the Soul of the Univerſe. They approved of divination by dreams and augury, and condemned that which is performed by means of ſacrifices. They had ſuch a ſtrong ſenſe of humanity, that they abſtained from ſhedding the blood even of animals, and from eating their fleſh.

Nature rewarded their virtues, and the gentleneſs of their manners, by innumerable diſcoveries, and beſtowed on them the glory of having as followers, *Socrates*, *Plato*, *Archytas* of Tarentum, who invented the ſcrew, *Xenophon*, *Epaminondas*, who was educated by *Lyſis* the Pythagorean, and the good King *Numa*, who taught the Tuſcan prieſts to conjure down the thunder: in a word, ſhe conferred on them all the luſtre that Philoſophy, Literature, the Military Art, or Royalty itſelf, can communicate to the moſt favoured of mortals.

Pythagoras has been calumniated, as having given encouragement to certain unmeaning ſuperſtitions; among others, abſtinence from the uſe of beans, &c. But, as truth is frequently under the neceſſity of preſenting herſelf to men under a veil, the great Philoſopher, under this allegory, conveyed to his diſciples an advice to abſtain from public employments, becauſe it was then the cuſtom to make uſe of beans, in voting at the election of Magiſtrates.

A very celebrated Writer, of modern times, who ſeems to look with an evil eye on every man of illuſtrious reputation, has preſumed to attack the character of *Xenophon*, in whom were united almoſt all the eminent qualities which can dignify human nature; piety, purity of manners, military ſkill and valour, and eloquence. His ſtyle is ſo ſweetly flowing, that the Greeks beſtowed on him the appellation of the Athenian Bee.

 This

This great man has been lately cenſured, on the ground of that celebrated retreat, by which he brought back ten thouſand Greeks into their own Country, from the very extremity of Perſia, having performed a march of eleven hundred leagues through a hoſtile country, and amidſt foes innumerable.

It has been aſſerted, by a man of great learning, that the retreat of this renowned General, was an effect of the good-nature, or the piety, of *Artaxerxes*; and he has, of conſequence, treated the route which *Xenophon* purſued, by the north of Perſia, as a ſuperfluous precaution.——But is it credible that the King of Perſia, intentionally, ſhewed indulgence to the Greeks, when we know, that, by a perfidious piece of cruelty, he had put to death twenty-five of their chief men? How was it poſſible for thoſe Greeks to have returned by the ſame road which they went, conſidering that every thing in this track had been put in motion to intercept them, and that the Perſians had, through it's whole extent, deſtroyed the villages? *Xenophon* defeated all their precautions, by directing his march through a track of which they had no foreſight.

For my own part, I conſider this military expedition as the moſt illuſtrious that ever was atchieved; not only from the innumerable conflicts, croſſings of rivers, forced marches over mountains, in the face of myriads upon myriads of enemies, through which it was accompliſhed: but becauſe it was not ſullied by a ſingle act of injuſtice, and had no other object in view but the preſervation of citizens. All that is held in high renown among the Warriors of Antiquity, have conſidered the retreat of the ten thouſand as a maſter-piece in the military art. There is a ſingle expreſſion tranſmitted to us, which will for ever cover it with glory, uttered in an age, and among a People, by which the Science of War was carried to the height of perfection, and in a ſituation which admitted not of diſſimulation: I mean an expreſſion of *Anthony*, when entangled in the country of

of the Parthians. That General, who possessed great military talents, and had at that time the command of an army of a hundred and thirteen thousand men, of whom sixty thousand were actually Roman citizens, obliged, as *Xenophon* was, to make a retreat in the face of the Parthians, and twenty times on the point of failing in his attempt, frequently exclaimed, with a sigh! *O the ten thousand!* (See *Plutarch.*)

STUDY TENTH.

OF SOME GENERAL LAWS OF NATURE,

AND, FIRST,

OF PHYSICAL LAWS.

WE ſhall divide theſe Laws into Laws *phyſical*, and Laws *moral.* We ſhall firſt examine, in the ſequel of this Volume, ſome phyſical Laws common to all the Kingdoms of Nature; and, in the following Study, ſhall make the application of them to plants, in conformity to the Plan propoſed in the commencement of this Work. We ſhall, afterwards, proceed to the conſideration of *moral* Laws; and ſhall endeavour to unfold in theſe, as well as in the *phyſical* Laws, the means of diminiſhing the ſum of human wretchedneſs.

I muſt make frequent appeals to the candor of my Readers. I am preſuming to open a path hitherto unattempted. I dare not flatter myſelf with the belief, that my progreſs and ſucceſs keep pace

with the ardor of my imagination, and the anticipations of my heart. But the imperfect materials, which I have busied myself in collecting, may, perhaps, one day, assist men of greater ability, and in a happier situation, in raising to Nature a temple more worthy of her. Recollect, my dear Reader, that all I promised you was the frontispiece and the ruins of it.

OF CONFORMITY.*

Though Conformity be a perception of our reason, I place it at the head of physical Laws, because

* I do not know any single word in our language which expresses closely the import of the French word *convenance*. It signifies *suitableness*, *correspondence*, the *exact* adaptation of one thing to another. I employ the term *conformity*, as coming the nearest to our Author's idea of any one that occurred to my mind. Whoever has attempted translation must, frequently, have felt the difficulty of rendering certain *words* by exactly equivalent *words*, though he was at no loss where general meaning and expression were concerned; for there is no perfect *convenance* between language and language. I wish it to be understood, then, that wherever the word *conformity* occurs, in the immediate sequel of this Translation, the meaning is, a complete coincidence, congruity, or tallying of object with object, as a bone fitted to it's socket, as the undulations of a paper check to those of it's counter-check, as eye to eye, hand to hand, foot to foot; and it applies equally to natural and to moral objects. H. H.

cause it is the first feeling which we endeavour to gratify in examining natural objects. Nay, there is a connection so intimate between the physical character of those objects, and the instinct of every being possessed of sensibility, that a colour, simply, is sufficient to rouse the passions of animals. A red object puts the bull into a rage, and suggests to most fowls and fishes the idea of prey. The objects of Nature display, in Man, a feeling of a higher order, independant of his wants; it is that of conformity. It is by means of the multiplied conformities of Nature that Man has formed his own reason; for *reason* means nothing else but the *relation*, or *conformity*, of things that exist. Thus, for example, if I examine a quadruped, the eye-lids, which it can raise or let fall, at pleasure, present to me conformities with light; when I look at the form of his feet, I see a conformity to the soil which he is designed to inhabit. It is impossible for me to conceive a determinate idea of these, without combining, on the subject, various feelings of conformity, or of the want of it. Nay, the most material objects, and such as have not, in strictness of speech, any decided form, cannot present themselves to us without those intellectual relations. A rustic grotto, or a steep rock, please or give pain, according as they present to us the ideas of repose or of obscurity, of perspective or of precipice.

Animals have a ſenſibility only of objects which have particular conformities to their wants. It may be affirmed that they have, in this reſpect, a ſhare of reaſon as perfect as our own. Had *Newton* been a bee, he could not, with all his geometry, have conſtructed his cell in a hive, without giving it, as the honey-bee has done, ſix equal partitions. But Man differs from animals, in his capacity of extending this ſentiment of conformity to all the relations of Nature, however foreign they may be to his perſonal demands. It is this extenſion of reaſon which has procured for him, by way of eminence, the denomination of a rational animal.

It is unqueſtionably true, that if all the particular rationality of all animals were united, the ſum would probably tranſcend the general reaſon of Man; for human reaſon has deviſed moſt of it's arts and crafts, entirely from an imitation of their productions; beſides, all animals come into the world with their peculiar induſtry, whereas Man is under the neceſſity of acquiring his, at the expenſe of much time and reflection; and, as I have juſt obſerved, by imitating the induſtry and ſkill of another. But Man excels them, not only by uniting, in himſelf alone, the intelligence ſcattered over all the reſt, but by his capability of riſing upward to the ſource of all conformities, namely,

namely, to GOD himſelf. The only character, which eſſentially diſtinguiſhes Man from the animal, is this, He is a religious Being.

No one animal partakes with him of this ſublime faculty. It may be conſidered as the principle of human intelligence. By it Man is exalted above the inſtinct of the beaſts, ſo as to be enabled to form a conception of the general plans of Nature; and which led him to ſuppoſe an order of things, from having caught a glimpſe of an Author. By it he was emboldened to employ fire as the firſt of agents, to croſs the Ocean, to give a new face to the Earth by agriculture, to ſubject all animals to his empire, to eſtabliſh Society on the baſis of a religion, and to attempt to raiſe himſelf up to DEITY by his virtues. It was not Nature, as is commonly believed, which firſt pointed out GOD to Man, but it is a ſenſe of the DEITY, in Man, which has indicated to him the order of Nature. The Savages are religious, long before they are Naturaliſts.

Accordingly, by the ſentiment of this univerſal conformity, Man is ſtruck with all poſſible conformities, though they may be foreign to him. He takes an intereſt in the hiſtory of an inſect; and if his attention is not engaged in behalf of all the inſects which ſurround him, it is becauſe he

perceives

perceives not their relations, unlefs there be fome *Reaumur* at hand to difplay them to him; or elfe, the conftant habit of feeing them renders them infipid; perhaps it may be fome odious or contemptible prejudice; for he is affected ftill more by moral than by phyfical ideas, and by his paffions more than by his reafon.

We fhall farther remark, that all the fentiments of conformity fpring up in the heart of Man, at the fight of fome ufeful end, which, frequently, has no manner of relation to his own perfonal wants: it follows, that Man is naturally good, for this very reafon, that he is rational; feeing the afpect alone of a conformity, though entirely foreign to him, communicates a fenfe of pleafure. It is from this natural fentiment of goodnefs, that the fight of a well-proportioned animal conveys to us agreeable fenfations, which increafe in proportion as the creature unfolds it's inftinct. We love to fee a turtle, even in an aviary; but that bird pleafes ftill more, when at large in the foreft, uttering the murmurs of love from the top of an elm, or when we perceive her bufily conftructing in it a neft for her young, with all the folicitude of maternal tendernefs.

Once more, it is from a refult of this natural goodnefs that want of conformity communicates a painful

painful ſenſation, which is always excited at ſight of any thing incongruous. Thus we are ſhocked on looking at a monſter. It gives us pain to ſee an animal wanting a foot or an eye. This feeling is independant of every idea of pain relatively to ourſelves, let Philoſophers ſay what they will; for we ſuffer in ſuch a caſe, though we are aſſured that the animal came into the world in that defective ſtate. We are pained at the ſight of incongruity, even in inſenſible objects. Withered plants, mutilated trees, an ill-aſſorted edifice, hurt our feelings. Theſe ſenſations are perverted, or ſuppreſſed, in Man, only by prejudice, or by education.

OF ORDER.

A ſeries of conformities, which have a common centre, conſtitutes order. There are conformities in the members of an animal; but order exiſts only in the body. Conformity re ers to the detail, and order to the combination. Order extends our pleaſure, by collecting a great number of conformities, and it fixes them, by giving them a determination toward one centre. It diſcovers to us at once, in a ſingle object, a ſucceſſion of particular conformities, and the leading conformity to which they all refer. Thus, order gives us pleaſure, as beings endowed with a reaſon which embraces all Nature;

Nature; and it pleaſes us ſtill more, perhaps, as being weak and limited creatures, capable of taking in only a ſingle point at once.

It gives us pleaſure, for example, to view the relations between the proboſcis of a bee, and the nectareous juices of flowers; between thoſe of her thighs, hollowed into ſpoons, and briſtled with hairs, to the fine powder of the ſtamina which ſhe there collects; between thoſe of her four wings, to the booty with which ſhe is loaded, (a reſource by Nature denied to flies which travel without a burthen, and which, for this reaſon, are furniſhed with two only *;) finally, the uſe of a long ſting, which ſhe has received for the defence of her property, and all the conformities of the organs of this ſmall inſect, which are more ingenious, and in much greater number, than thoſe of the largeſt animals.

But the intereſt grows upon us, when we ſee her covered all over with a yellow powder, her thighs pendent, and half oppreſſed with her burden, directing her flight through the air, acroſs plains, rivers, and ſhady groves, under points of the

* The ichneumon, or aquatic dragon-fly, is, in like manner provided with four wings, becauſe ſhe too was intended to fly under a load. I have ſeen her catch butterflies in the air.

wind,

wind, with which ſhe is well acquainted, and alighting, with a humming ſound, on the cavernous trunk of ſome aged oak. Here again we perceive a ſucceſſive order, on ſeeing a great multitude of little individuals, ſimilar to her, coming out, and going in, according as the buſineſs of the hive may require. That one, whoſe particular conformities we have been admiring, is only a ſingle member of a numerous Republic; and this Republic itſelf is but a ſmall Colony, of the immenſe Nation of bees, ſpread over the whole Earth, from the Line up to the ſhores of the frozen Ocean.

This Nation, again, is ſubdivided into different ſpecies, conformably to the various ſpecies of flowers; for there are ſome which, being deſtined to live on flowers which have no depth, ſuch as the radiated, are armed with five hooks, to prevent their ſliding on the petals. Others, on the contrary, ſuch as the bees of America, have no ſtings, becauſe they conſtruct their hives in the trunks of prickly trees, which are very common in that part of the world: ſuch trees, accordingly, are their protection. There are many other conformities, among the other ſpecies of bees, with which we are totally unacquainted. Nevertheleſs, this vaſt Nation, ſo varied in it's Colonies, and whoſe poſſeſſions are ſo extenſive, is but one little family of the

the claſs of flies, of which we know, in our own Climate alone, near ſix thouſand ſpecies, moſt of them as diſtinct from each other, as to forms and inſtincts, as bees themſelves are from other flies.

If we were to compare the relations of this volatile claſs, ſo numerous in itſelf, with all the parts of the vegetable and animal kingdoms, we ſhould find an innumerable multitude of different orders of conformity; and were we to add to them, thoſe which are preſented to us in the legions of butterflies, ſcarabs, locuſts, and other inſects which likewiſe fly, we ſhould multiply them to infinity. All this, ſtill, would be but a ſmall matter, compared to the various induſtry of the other inſects which crawl, which leap, which ſwim, which climb, which walk, which are motionleſs; the number of theſe is incomparably greater than that of the firſt: and the hiſtory of theſe laſt, added to that of the others, would, after all, be the hiſtory of only one puny race of this great Republic of the World, repleniſhed as it is with innumerable ſhoals of fiſhes, and endleſs legions of quadrupeds, amphibious animals, and birds.

All their claſſes, with their diviſions, and ſubdiviſions, the minuteſt individual of which preſents a very extenſive ſphere of conformities, are themſelves only particular conformities; only rays and points

points in the general ſphere, of which Man alone occupies the centre, and apprehends the immenſity.

From a ſenſe of the general order, two other ſentiments obviouſly reſult; the one which throws us imperceptibly into the boſom of the DEITY, and the other, which recals us to the perception of our wants; the one which exhibits to us, as the original cauſe, a Being infinitely intelligent, without us, and the other, as the ultimate end, a very limited being, in our own perſon. Theſe two ſentiments characterize the two powers of which Man is conſtituted, the ſpiritual and the corporeal. This is not the place to unfold theſe: it is ſufficient for my purpoſe to remark, that theſe two natural ſentiments are the general ſources of the pleaſure which we derive from the order of Nature. Animals are affected only by the ſecond, and that in a very limited degree.

A bee has a ſentiment of the order of her hive; but ſhe knows nothing beyond that. She is totally ignorant of the order which regulates the ants in their neſt, though ſhe may have frequently ſeen them proſecuting their labours. To no purpoſe would ſhe reſort, in the event of her hive's being deſtroyed, to ſeek refuge, as a republican, in the midſt of their Republic. To no purpoſe, in

in the hour of distress, would she attempt to avail herself of the qualities which she has in common with them, and which make communities to flourish, temperance, a disposition to industry, the love of Country, and, above all, that of equality, united to superior talents: she would meet, from them, with no hospitality, no consideration, no compassion. Nay, she would not find an asylum even among other bees of a different species: for every species has it's proper sphere assigned to it, and this by an effect of the wisdom of Nature; for if it were otherwise, the best organized species, or the strongest, would expel the others from their domains. Hence it follows, that the society of animals could not subsist independent of the passions, nor human society independent of virtue. Man alone, of all animals, possesses the sentiment of universal order, which is that of the DEITY himself; and by carrying over the whole Earth, the virtues which are the fruits of it, whatever may be the differences which prejudice interposes between man and man, it is sure of alluring all hearts to itself. It was by this sentiment of universal order which governed your life, that you have become the men of all Nations, and that you interest us still, even when you are no longer with us, *Aristides*, *Socrates*, *Marcus-Aurelius*, divine *Fenelon*, and you, likewise, unfortunate *John-James!*

HAR-

HARMONY.

Nature oppoſes beings to each other, in order to produce between them agreeable conformities. This Law has been acknowledged from the higheſt Antiquity. It is to be found in many paſſages of the Holy Scriptures. I produce one from the Book of Eccleſiaſticus *: *Omnia duplicia, unum contra unum, & non fecit quidquam deeſſe.* "All "things are double, one againſt another; and He "hath made nothing unperfect: one thing eſta- "bliſheth the good of another."

I conſider this great truth as the key of all Philoſophy. It has likewiſe been fruitful in diſcovery, as well as that other; *Nothing has been created in vain.* It has been the ſource of taſte in the arts and in eloquence. Out of contraries ariſe the pleaſures of viſion, of hearing, of touching, of taſting, and all the attractions of beauty, of whatever kind it may be. But from contraries, likewiſe, ariſe uglineſs, diſcord, and all the ſenſations which fill us with diſguſt. In this there is ſomething very wonderful, that Nature ſhould employ the ſame cauſes to produce effects ſo different.

* Eccleſiaſticus, chap. xlii. ver. 24, 25.

ferent. When ſhe oppoſes contraries to each other, painful affections are excited in us; but when ſhe blends them, we are agreeably affected. From the oppoſition of contraries ſprings diſcord, and from their union reſults harmony.

Let us endeavour to find in Nature ſome proofs of this great Law. Cold is the oppoſite of heat, light of darkneſs, earth of water; and the harmony of theſe contrary elements produces effects the moſt delightful: but if cold ſucceeds rapidly to heat, or heat to cold, moſt vegetables and animals, expoſed to ſuch ſudden revolutions, are in danger of periſhing. The light of the Sun is agreeable; but if a black cloud ſuddenly intercepts, or bears upon, the luſtre of his rays, or if a gleaming flame, ſuch as that of lightning, burſts from the boſom of a very dark night, the eye, in both theſe caſes, undergoes a painful ſenſation. The horror of a thunder-ſtorm is greatly increaſed, if the tremendous exploſions are interrupted by intervals of profound ſilence; and it is heightened inexpreſſibly, if the oppoſitions, of thoſe celeſtial fires and obſcurities, of that tumult and tranquillity, make themſelves felt in the gloom and ſilence of night.

Nature oppoſes, in like manner, at ſea, the white foam of the billows to the black colour of the

the rocks, in order to announce to the mariners from afar the danger of ſhallows. She frequently preſents to them forms analagous to deſtruction, ſuch as thoſe of ferocious animals, of edifices in ruins, or of the keels of ſhips turned upward. She even extracts from theſe awful forms hollow noiſes reſembling groans, and broken off by long intervals of ſilence. The Ancients believed that they ſaw in the rock of Scylla, a female of a hideous form, whoſe girdle was ſurrounded by a pack of dogs, which barked inceſſantly. Mariners have given to the rocks of the Bahama channel, ſo noted for ſhipwrecks, the name of the *Martyrs*, becauſe they preſent, through the ſpray of the billows which break on them, the horrid ſpectacle of men impaled, and expoſed on wheels. You would even imagine, that you heard ſighs and ſobbings iſſuing from theſe diſmal ſhallows.

Nature employs, in like manner, thoſe claſhing oppoſitions, and thoſe ominous ſigns, to expreſs the characters of ſavage and dangerous animals of all kinds. The lion ſtrolling, by night, through the ſolitudes of Africa, announces his approach from a great diſtance, by roarings, which have a ſtriking reſemblance to the rolling of thunder. The vivid and inſtantaneous flaſhes of fire which dart from his eyes in the dark, exhibit, beſides, the appearance of that formidable meteor, lightning.

During the Winter ſeaſon, the howlings of the wolves in the foreſts of the North reſemble the whiſtling of the winds as they agitate the trees; the cries of birds of prey are ſhrill, piercing, and now and then interrupted by hollow notes. Nay, there are ſome which emit the ſounds of a human being in pain. Such is the lom, a ſpecies of ſea-fowl, which feeds on the ſhelvy coaſt of Lapland *, on the dead bodies of animals which are there put aſhore: he cries like a man a-drowning.

Noxious inſects exhibit the ſame oppoſitions, and the ſame ſignals of deſtruction. The gnat, thirſting after human blood, announces himſelf to the eye, by the white points with which his brown-coloured body is ſtudded, and to the ear, by his ſhrill notes, which diſturb the tranquillity of the grove. The carnivorous waſp is ſpeckled, like the tiger, with black ſtripes on a yellow ground. You frequently find in our gardens, about the roots of trees which are decaying, a ſpecies of bug, of a longiſh form, which bears on it's red body marbled with black, the maſk of a death's head. Finally, the inſects which attack our perſons more immediately, however ſmall they may be, diſtinguiſh themſelves by glaring oppoſitions of colour to the field on which they ſettle.

* See *John Schæffer*'s Hiſtory of Lapland.

But

But when two contraries come to be blended, of whatever kind, the combination produces pleaſure, beauty, and harmony. I call the inſtant, and the point, of their union: *harmonic expreſſion.* This is the only principle which I have been able to perceive in Nature; for the elements themſelves, as we have ſeen, are not ſimple: they always preſent accords formed of two contraries to analyſes multiplied without end. Thus, to reſume ſome of the inſtances already adduced, the gentleſt temperatures, and the moſt favourable, in general, to every ſpecies of vegetation, are thoſe of the ſeaſons in which cold is blended with heat, as in the Spring and Autumn. They are then productive of two ſaps in trees, which the ſtrongeſt heats of Summer do not effect. The moſt agreeable production of light and darkneſs are perceptible at thoſe ſeaſons when they melt into each other, and form what Painters call the *clear-obſcure* and *half-lights.* For this reaſon it is, that the moſt intereſting hours of the day are thoſe of morning and evening: thoſe hours, when, in the beautiful imagery of *La Fontaine,* in his charming fable of *Pyramus* and *Thiſbe,* the ſhade and the light ſtrive for the maſtery in the azure fields. The moſt lovely proſpects are thoſe in which land and water are loſt in each other; this ſuggeſted that obſervation of honeſt *Plutarch*; namely, that the pleaſanteſt land-journies are thoſe which we make along

along the ſhore of the ſea; and the moſt delightful voyages thoſe which are a coaſting along the land. You will obſerve theſe ſame harmonies reſult from ſavours and ſounds the moſt oppoſite, in the pleaſures of the palate, and of the ear.

We ſhall proceed to examine the uniformity of this Law, in the very principles by which Nature gives us the firſt ſenſations of her works, which are colours, forms, and motions.

Of Colours.

I ſhall be carefully on my guard not to give a definition of colours, and ſtill more, not to attempt an explanation of their origin. Colours are, as Naturaliſts tell us, refractions of the light on bodies, as is demonſtrated by the priſm, which, by breaking a ray of the Sun, decompounds it into ſeven coloured rays, which diſplay themſelves in the following order; red, orange, yellow, green, blue, indigo, and violet. Theſe are, as they will have it, the ſeven primitive colours. But, as has been already obſerved, We do not know what is primitive in Nature. I might object to them, that if the colours of objects are produced only from the refraction of the light of the Sun, they ought to diſappear at the light of a taper, for the light

light of a taper is not decompounded by the prifm: but I fhall confine myfelf to a few reflections refpecting the number, and the order of thofe feven pretended primitive colours.

Firft, it is evident that four of thefe are compounded; for orange is made up of yellow and red; green, of yellow and blue; violet, of blue and red; and indigo is nothing more than a tint of blue furcharged with black. This reduces the folar colours to three primordial; namely, yellow, red, and blue; to which if we add white, which is the colour of light, and black, which is the privation of it, we fhall have five fimple colours with which may be compounded all imaginable fhades of colour.

I muft here obferve, that our philofophical machinery deceives us with it's affectation of fuperior intelligence, not only becaufe it afcribes falfe elements to Nature, as when the prifm difplays compound for primitive colours, but by ftripping her of fuch as are true; for how many white and black bodies muft be reckoned colourlefs, confidering that this fame prifm does not exhibit their tints in the decompofition of the folar ray!

This inftrument leads us farther into an error refpecting the natural order of thefe very colours, by

by making the red ray the firſt in the ſeries, and the violet ray the laſt. The order of colours in the priſm, therefore, is only a triangular decompoſition of a ray of cylindrical light, the two extremes of which, red and violet, participate the one of the other, without terminating it; ſo that the principle of colours, which is the white ray and it's progreſſive decompoſition, is no longer manifeſted in it. I am very much diſpoſed to believe, that it is even poſſible to cut a cryſtal with ſuch a number of angles, as would give to the refractions of the ſolar ray an order entirely different, and would multiply the pretended primitive colours far beyond the number of ſeven. The authority of ſuch a polyedron would become altogether as reſpectable as that of the priſm, if the Algebraiſts were to apply to it a few calculations, ſomewhat obſcure, with a ſeaſoning of the ratiocination of the corpuſcular philoſophy, as they have done with regard to the effects of the triangular inſtrument.

We ſhall employ a method, not quite ſo learned, to convey an idea of the generation of colours, and of the decompoſition of the ſolar ray. Inſtead of examining them in a priſm of glaſs, we ſhall conſider them in the Heavens, and there we ſhall behold the five primordial colours unfold themſelves in the order which we have indicated.

In

In a fine Summer's night, when the ſky is ſerene, and loaded only with ſome light vapours, ſufficient to ſtop, and to refract, the rays of the Sun, as they traverſe the extremities of our Atmoſphere, walk out into an open plain, where the firſt fires of *Aurora* may be perceptible. You will firſt obſerve the Horizon whiten at the ſpot where ſhe is to make her appearance; and this kind of radiance, from it's colour, has procured for it, in the French language, the name of *aube* (the dawn) from the Latin word *alba*, which ſignifies white. This whiteneſs inſenſibly aſcends in the Heavens, and aſſumes a tint of yellow, ſome degrees above the Horizon; the yellow, as it riſes ſome degrees higher, paſſes into orange; and this ſhade of orange riſes upward into the lively vermilion, which extends as far as the Zenith. From that point you will perceive in the Heavens, behind you, the violet ſucceeding the vermilion, then the azure, after it the deep blue or indigo colour, and, laſt of all, the black quite to the weſtward.

Though this diſplay of colours preſents an infinite multitude of intermediate ſhades, which ſucceed each other with conſiderable rapidity, nevertheleſs, there is a moment, and, if my recollection of it be accurate, it is the moment when the Sun is juſt going to exhibit his diſk, that the dazzling white is viſible in the Horizon, the pure yellow,

yellow, at an elevation of forty-five degrees; the fire colour, in the Zenith; the pure blue, forty-five degrees under it, toward the Weſt; and, in the very Weſt, the dark veil of night ſtill lingering on the Horizon. At leaſt, I think, I have remarked this progreſſion between the Tropics, where there is ſcarcely any horizontal refraction to make the light prematurely incroach on the darkneſs, as in our Climates.

J. J. Rouſſeau obſerved to me one day, that though the field of thoſe celeſtial colours be blue, the yellow tints which melt away into it, do not produce by that mixture the colour of green, as is the caſe in our material colours, when theſe two ſhades are blended. But I replied, that I had frequently perceived green in the Heavens, not only between the Tropics, but over the Horizon of Paris. That colour, in truth, is hardly ever ſeen with us, but in ſome fine Summer evenings. I have likewiſe ſeen, in the clouds of the Tropics, all the colours perceptible on the earth, particularly at ſea, and in ſtormy weather. You may then ſee ſome of them copper-coloured, ſome of the colour of the ſmoke of a tobacco-pipe, ſome brown, reddiſh, black, gray, cheſnut, livid, the colour of a heated oven's mouth. As to thoſe which appear there in fine weather, ſome are ſo lively and brilliant, that no palace can exhibit any

thing

thing to vie with them, were it enriched with all the gems of the Great Mogul.

Sometimes the trade-winds, from the North-east, or South-east, which conſtantly blow there, card the clouds through each other, like ſo many tufts of ſilk; then ſweep them away to the Weſt, croſſing and re-croſſing them over one another, like the oſiers interwoven in a tranſparent baſket. They throw over the ſides of this chequered work, the clouds which are not employed in the contexture, and which are in no ſmall number, roll them up into enormous maſſes, as white as ſnow, draw them out along their extremities in form of a crupper, and pile them upon each other, like the Cordeliers of Peru, moulding them into the ſhape of mountains, of caverns, and of rocks; afterwards, as evening approaches, they grow ſomewhat calm, as if afraid of deranging their own workmanſhip. When the Sun comes to ſet behind this magnificent netting, you ſee a multitude of luminous rays tranſmitted through each particular interſtice, which produce ſuch an effect, that the two ſides of the lozenge illuminated by them, have the appearance of being begirt with a fillet of gold, and the other two, which are in the ſhade, ſeem tinged with a ſuperb ruddy orange. Four or five divergent ſtreams of light, emanated from the ſetting Sun up to the Zenith, clothe with fringes

fringes of gold, the undeterminate ſummits of this celeſtial barrier, and proceed to ſtrike with the reflexes of their fires the pyramids of the collateral aërial mountains, which then appear to conſiſt of ſilver and vermilion. At this moment of the evening are perceptible, amidſt their redoubled ridges, a multitude of valleys extending into infinity, and diſtinguiſhing themſelves at their opening by ſome ſhade of fleſh, or of roſe-colour.

Thoſe celeſtial valleys preſent, in their different contours, inimitable tints of white, melting away into white, or ſhades lengthening themſelves out, without mixing over other ſhades. You ſee, here and there, iſſuing from the cavernous ſides of thoſe mountains, tides of light precipitating themſelves in ingots of gold and ſilver, over rocks of coral. Here it is a gloomy rock, pierced through and through, diſcloſing, beyond the aperture, the pure azure of the firmament; there it is an extenſive ſtrand, covered with ſands of gold, ſtretching over the rich ground of Heaven; poppy-coloured, ſcarlet, and green as the emerald.

The reverberation of thoſe weſtern colours diffuſes itſelf over the Sea, whoſe azure billows it glazes with ſaffron and purple. The mariners, leaning over the gunwale of the ſhip, admire in ſilence thoſe aërial landſcapes. Sometimes this

ſublime

ſublime ſpectacle preſents itſelf to them at the hour of prayer, and ſeems to invite them to lift up their hearts with their voices to the Heavens. It changes it's appearance every inſtant: what was juſt now luminous, becomes in a moment coloured ſimply; and what is now coloured, will, by and by, be in the ſhade. The forms are as variable as the ſhades; they are, by turns, iſlands, hamlets, hills clothed with the palm-tree; vaſt bridges ſtretching over rivers, fields of gold, of amethyſts, of rubies, or rather, nothing of all this; they are celeſtial colours and forms which no pencil can pretend to imitate, and which no language can deſcribe.

It is very remarkable, that all travellers who have, at various ſeaſons, aſcended to the ſummits of the higheſt mountains on the Globe, between the Tropics, and beyond them, in the heart of the Continent, or in Iſlands, never could perceive, in the clouds below them, any thing but a gray and lead-coloured ſurface, without any variation whatever as to colour, being always ſimilar to that of a lake. The Sun, notwithſtanding, illuminated thoſe clouds with his whole light; and his rays might there combine, without obſtruction, all the laws of refraction to which our ſyſtems of Phyſics have ſubjected them. From this obſervation it follows,

follows, and I ſhall repeat it in another place, because of it's importance, that there is not a ſingle ſhade of colour employed in vain, through the whole extent of the Univerſe; that thoſe celeſtial decorations were made for the level of the Earth, and that their magnificent point of view is taken from the habitation of Man.

Theſe admirable concerts of lights and forms, which manifeſt themſelves only in the lower region of the clouds, the leaſt illuminated by the Sun, are produced by laws with which I am totally unacquainted. But let their variety be what it may, the whole are reducible to five colours: yellow appears to be a generation from white; red a deeper ſhade of yellow; blue, a tint of red greatly ſtrengthened; and black, the extreme tint of blue. It is impoſſible to entertain a doubt reſpecting this progreſſion, if you obſerve, in the morning, as I have mentioned, the expanſion of light in the Heavens. You there ſee thoſe five colours, with their intermediate ſhades, generating each other nearly in this order: white, ſulphur yellow, lemon yellow, yolk of egg yellow, orange, Aurora colour, poppy red, full red, carmine red, purple, violet, azure, indigo, and black. Each of thoſe colours ſeems to be only a ſtrong tint of that which precedes it, and a faint tint of

that

that which follows; thus the whole together appear to be only modulations of a progreffion, of which white is the firft term, and black the laft.

In this order, whereof the two extremes, white and black, that is, light and darknefs, produce, in harmonizing, fo many different colours, you will remark, that the red colour holds the middle place, and that it is the moft beautiful of the whole, in the judgment of all Nations. The Ruffians, when they would defcribe a beautiful girl, fay fhe is red. They call her *craftna dévitfa:* red and beautiful being with them fynonimous terms. In Mexico and Peru, red was held in very high eftimation. The moft magnificent prefent which the Emperor *Montezeuma* could devife for *Cortez*, was a necklace of lobfters, which naturally had that rich colour*. The only demand made upon the Spaniards by the King of Sumatra, on their firft landing in his country, and prefenting him with many famples of the commerce and induftry of Europe, was fome corals, and fcarlet-coloured ftuffs †; and he promifed to give them, in return, all the fpiceries, and other merchandize, of India, for which they might have occafion.

* See Herrera.

† See General Hiftory of Voyages by the Abbé *Prevoft*.

 There

There is no ſuch thing as carrying on trade, to any advantage, with the Negros, the Tartars, the Americans, and the Eaſt-Indians, but through the medium of red cloths. The teſtimonies of travellers are unanimous reſpecting the preference univerſally given to this colour. Of this I could produce proofs innumerable, were I not afraid of being tedious. I have indicated the univerſality of this taſte, merely in the view of demonſtrating the falſhood of the philoſophic axiom which aſſerts, that taſtes are arbitrary, or, which amounts to the ſame thing, that there are in Nature no laws for beauty, and that our taſtes are the effects of prejudice. The direct contrary of this is the truth; it is prejudice that corrupts our natural taſtes, which would otherwiſe be the ſame over the whole Earth. From a prejudice of this kind, the Turks prefer green to every other colour, becauſe, according to the tradition of their Theologians, this was the favourite colour of *Mahomet*, and his deſcendants alone, of all the Turks, have the privilege of wearing the green turban.

But from a ſimilar, though oppoſite prejudice, the Perſians, their neighbours, deſpiſe green, becauſe they reject the traditions of thoſe Turkiſh Theologians, and, accordingly, do not acknowledge that conſanguinity of their Prophet, being followers of *Ali*.

From

From another chimera, yellow appears to the Chinefe the moft diftinguifhed of all colours, becaufe it is that of their emblematical dragon. Yellow is, in China, the imperial colour, as green is in Turkey. The Chinefe, neverthelefs, if we may depend on the authority of *Ifbrants-Ides* reprefent their Gods and Heroes, on the ftage, with their faces ftained a blood colour *. All thefe Nations, the political colour excepted, confider red as the moft beautiful, which is fufficient to eftablifh, with refpect to it, an unanimity of preference.

But, without dwelling longer on the variable teftimony of Man, we have only to appeal to that of Nature. It is with red that Nature heightens the moft brilliant parts of the moft beautiful flowers. She has given a complete clothing of it to the rofe, the Queen of the Garden: fhe has beftowed this tint on the blood, which is the principle of life in animals: fhe invefts moft of the feathered race, in India, with a plumage of this colour, efpecially in the feafon of love. There are very few birds, on which fhe does not then beftow fome fhades, at leaft, of this rich hue. Some have their heads covered with it, fuch as thofe which are called Cardinals; others have a breaft-plate of it, a necklace, a capuchin, a fhoulder-knot. There

* Journey from Mofcow to China, page 141.

are

are ſome which preſerve entirely the gray, or brown ground of their plumage, but glazed over with red, as if they had been rolled in carmine. Others are beſprinkled with red, as if you had blown a ſcarlet powder over them. Together with this, ſome have a mixture of ſmall white points, which produces a charming effect. A little bird of India, called *Bengali*, is painted in this manner.

But nothing can be more lovely than a turtle-dove of Africa, who bears on her pearl-gray plumage, preciſely over the place of the heart, a bloody ſpot conſiſting of different kinds of red blended, perfectly reſembling a wound: it ſeems as if this bird, dedicated to Love, was deſtined to wear her maſter's livery, and had ſerved as a mark to his arrows. What is ſtill more wonderful, theſe rich coraline tints diſappear in moſt of thoſe birds as ſoon as the ſeaſon of love is over, as if they were robes of ceremony, lent them by the benevolence of Nature, only during the celebration of their nuptials.

The red colour, ſituated in the midſt of the five primordial colours, is the harmonic expreſſion of them, by way of excellence; and the reſult, as has been ſaid, of the union of two contraries, light and darkneſs. There are, beſides, tints

tints extremely agreeable, compounded of the oppositions of extremes. For example, of the ſecond and fourth colour, that is, of yellow and blue, is formed green, which conſtitutes a very beautiful harmony, and which ought, perhaps, to poſſeſs the ſecond rank in beauty, among colours, as it poſſeſſes the ſecond in their generation. Nay, green appears, in the eyes of many perſons, if not the moſt beautiful tint, at leaſt the moſt lovely, becauſe it is leſs dazzling than red, and more congenial to the eye *.

I ſhall

* It is harmony which renders every thing perceptible, juſt as monotony makes every thing to diſappear. Not only are colours the harmonic conſonances of light: but there is no one coloured body whoſe tint Nature does not heighten by the contraſt of the two extreme generative colours, which are white and black. Every body detaches itſelf by means of light and ſhade, the firſt of which is a-kin to the white, and the ſecond to the black. Every body, accordingly, bears upon it a complete harmony.

This is not the effect of chance. Were we enlightened, for example, by a luminous air, we ſhould not perceive the form of bodies; for their outlines, their profiles, and their cavities, would be overſpread with an uniform light, which would cauſe their prominent and retreating parts to diſappear. With a providence, therefore, completely adapted to the weakneſs of our viſion, the AUTHOR of Nature has made the light to iſſue from a ſingle point of Heaven: and with an intelligence that equally challenges our admiration, He has given a motion of progreſſion to the Sun, who is the ſource of that light, in order to form, with the ſhades, harmonies varying every inſtant. He has likewiſe

I ſhall inſiſt no longer on the other harmonic ſhades which may be deduced, in conformity to the laws of their generation, from colours the moſt oppoſite; and of which might be formed accords and concerts, ſuch as Father *Caſtel* produced from his celebrated Harpſichord. I muſt, however, remark, that colours may have a powerful influence on the paſſions, and that they, as well as their harmonies, may be referred to the moral af-

wiſe modified that light, on terreſtrial objects, in ſuch a manner, as to illuminate both immediately and mediately, by refraction and by reflection, and to extend it's tints, and it's harmonies, with thoſe of ſhade, in a way that no words can expreſs.

J. J. Rouſſeau one day made this obſervation: "Painters "can give the appearance of a body in relief, to a ſmooth ſur- "face; I ſhould be very glad to ſee them give the appearance of "a ſmooth ſurface to a raiſed body." I made no reply at the moment; but having ſince reflected on the ſolution of this problem in optics, I by no means conſider the thing as impoſſible. The whole that is neceſſary, according to my idea, is to deſtroy one of the harmonic extremes which render bodies prominent. For inſtance, if the object aimed at were to flatten a baſs-relief, it would be neceſſary to paint the cavities white, or the prominent parts black. Accordingly, as they employ the harmony of the clare-obſcure, to give the appearance of a ſolid body to a plane ſurface, they might employ the monotony of one ſingle tint, to make what is actually raiſed and ſolid to diſappear, and become to the eye a plane-ſurface. In the firſt caſe, painting renders that viſible which is not tangible; in the ſecond, we ſhould have a body that might be touched, without being viſible. This laſt deception would be fully as ſurprizing as the other.

fections.

fections. For example, making red the point of departure, which is the harmonic colour fuper-eminently, and proceeding toward white in an afcending progreffion, the nearer you approach to this firft term, the more lively and gay are the colours. You will have in fucceffion the poppy, the orange, the yellow, the lemon, the fulphur, the white. On the contrary, the farther you proceed from red toward black, the fadder and more lugubrious are the colours; for this is the progreffion; purple, violet, blue, indigo, and black.

In the harmonies which may be formed, on both fides, by the union of oppofite colours, the more that the tints of the afcending progreffion predominate, the more lively will be the harmonies produced; and the contrary will take place, in proportion as the colours of the defcending harmony fhall prevail. From this harmonic effect it is, that green, being compounded of yellow and blue, is fo much more gay, as the yellow has the afcendant, and fad in proportion as the blue predominates.

Farther, from this harmonic influence it is, that white transfufes moft gaiety into all other tints, becaufe it is light itfelf. Nay, it produces, from oppofition, a moft delightful effect in the harmonies, which I call melancholy; for, blended

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with violet, it gives the delicious hue of the lilach flower; mixed with blue, it makes azure; and with black, produces pearl-gray; but melted away into red, it exhibits the rofe colour, that enchanting tint, which is the flower of life. On the other hand, according to the predominance of black in colours which are gay, the effect produced is more mournful than would have refulted from unmixed black. This becomes perceptible on blending it with yellow, orange, and red, which are thereby rendered dull and gloomy colours. Red gives life to every tint into which it is infufed, as white communicates gaiety, and black fadnefs.

If you would wifh to produce effects entirely oppofite to moft of thofe which I have been juft indicating, you have only to place the extreme colours clofely by each other, without mingling them. Black, oppofed to white, produces the moft mournful, and the harfheft effect. Their oppofition is a badge of mourning among moft Nations, as it is the fignal of impending deftruction in the tempeftuous appearances of the Heavens, and in the commotions of the Ocean. The yellow too, oppofed to black, is the characteriftic of many dangerous animals, as the wafp, the tyger, and feveral others....I do not pretend to infinuate, that the women have not the fkill of em-

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ploying to advantage, in their dreſs, thoſe oppoſite colours; but they are called in as an embelliſhment only on account of the contraſts which they form with the colour of their complexion; and as the red predominates there, it follows that the oppoſite colours are advantageous to them, for harmonic expreſſion is never ſtronger, than when found between the two extremes which produce it. We ſhall offer a few thoughts hereafter on this part of harmony, when we come to ſpeak of contraſts, and of the human figure.

It would be ridiculous to affect ignorance of the objections which may be ſtarted againſt the univerſality of theſe principles. We have repreſented white as a gay, and black as a ſad colour. Nevertheleſs, certain Negro Nations repreſent the Devil as white: the inhabitants of the Peninſula of India, in token of mourning, rub their forehead and temples with the powder of ſandal-wood, the colour of which is a yellowiſh, white. The Navigator *La Barbinois*, who, in his voyage round the world, has as well deſcribed the manners of China, as thoſe of our ſea-officers, and of ſeveral European Colonies, ſays, that white is the colour of mourning among the Chineſe. From theſe inſtances it might be concluded, that the feeling of colour muſt be arbitrary, as it is not the ſame in all Nations.

I venture

I venture to offer the following reply to theſe objections. It has already been proved by evidence, that the Nations of Africa and Aſia, however black they may be, prefer white women to thoſe of every other tint. If there be any Negro Nations who paint the Devil white, this may be eaſily accounted for, from the ſtrong feeling which they have of the tyranny which the whites exerciſe over them. White, accordingly, having become with them a political colour, ceaſes to be a natural one. Beſides, the white in which they paint their Devil is not a white, beautifully harmonious, like that of the human figure: but a dead white, a chalk white, ſuch as that with which our painters illuminate the figures of phantoms and ghoſts in their magical and infernal ſcenes.

If this dazzling colour is the expreſſion of mourning among the Indians and Chineſe, the reaſon is, it contraſts harſhly with the black ſkin of thoſe Nations. The Indians are black. The ſkin of the ſouthern Chineſe is much ſun-burnt. They derive their religion and their leading cuſtoms from India, the cradle of the Human Race, the inhabitants of which are black. Their outward garments are of a gloomy colour: a great part of their dreſs conſiſts of black ſattin; the covering for their under extremities is black boots; the ornamental furniture of their houſes conſiſts,

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in a great meaſure, of that beautiful black varniſhed ware, which we import from their country. White muſt, therefore, produce a harſh diſſonance with their furniture, their dreſs, and, above all, with the duſky colour of their ſkin.

If thoſe Nations were to wear a black habit, in mourning, as we do, be their colour ever ſo deep, it would not form a claſhing oppoſition in their dreſs. The expreſſion of grief, accordingly, is preciſely the ſame with them as with us. For if we, in a ſeaſon of mourning, oppoſe the black colour of our clothes to the white colour of our ſkin, in order thence to produce a funereal diſſonance, the ſouthern Nations oppoſe, on the contrary, the white colour of their garments to the duſky colour of their ſkin, in order to produce the ſame effect.

This variety of taſte admirably confirms the univerſality of the principles which we have laid down reſpecting the cauſes of harmony and diſſonance. It farther demonſtrates, that the agreeableneſs, or diſagreeableneſs of a colour, reſides not in one ſingle ſhade, but in the harmony, or in the claſhing contraſt, of two oppoſite colours.

We might find proofs of thoſe laws multiplied without end, in Nature, to which Man ought ever

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to have recourſe in all his doubts. She oppoſes harſhly, in hot countries as in cold, the colours of dangerous and deſtructive animals. Venemous reptiles are univerſally painted in gloomy colours. Birds of prey are univerſally of an earthy hue oppoſed to yellow, and white ſpecks on a dark ground, or dark ſpots on a light ground. Nature has given a yellow robe, ſtriped with duſky brown, and ſparkling eyes, to the tyger lying in ambuſh under the ſhade of the foreſts of the South: and ſhe has tinged with black the ſnout and paws, and with blood-colour the throat and eyes, of the white bear, and thereby renders him apparent, notwithſtanding the whiteneſs of his fur, amidſt the ſnows of the North.

Of Forms.

Let us now proceed to the generation of forms. If I am not miſtaken, the principles of theſe, like thoſe of colours, are reducible to five, namely, the line, the triangle, the circle, the ellipſe, and the parabola.

The line generates all forms, as the ray of light does all colours. It goes on progreſſively, like the other, in it's generations, ſtep by ſtep, producing

ducing firſt, by three fractions, the triangle, which of all figures, contains the ſmalleſt of ſurfaces under the greateſt of circuits. The triangle afterward, compoſed itſelf of three triangles at the centre, produces the ſquare, which conſiſts of four triangles from the central point; the pentagon, which conſiſts of five; the hexagon, which conſiſts of ſix; and ſo of the reſt of the polygons, up to the circle, which is compoſed of a multitude of triangles, whoſe ſummits are at it's centre, and the baſes at it's circumference: and which, contrary to the triangle, contains the greateſt of ſurfaces under the ſmalleſt of peripheries. The form which has, hitherto, always been going on progreſſively, commencing with the line, relatively to a centre, up to the circle, afterwards deviates from it; and produces the ellipſe, then the parabola, and finally all the other widened curves, the equations of which may all be referred to this laſt.

So that under this aſpect, the indefinite line has no common centre: the triangle has three points in it's bounding lines, which have a common centre; the ſquare has four; the pentagon five; the hexagon ſix: and the circle has all the points of it's circumference regulated conformably to one common and only centre. The ellipſe begins to deviate from this regulation, and has two centres; and the parabola, as well as the other

curves,

curves, which are analogous to it, have centres innumerable contained in their ſeveral axes, from which they remove farther and farther, forming ſomething like funnels.

On the ſuppoſition of this aſcending generation of forms, from the line, through the triangle, up to the circle; and their deſcending generation, from the circle, through the ellipſe, to the parabola, I deduce, from theſe five elementary forms, all the forms of Nature; as, with the five primordial colours I compoſe all the poſſible ſhades of colour.

The line preſents the ſlendereſt form, the circle preſents the fulleſt, and the parabola the moſt obliquely fluted. In this progreſſion it may be remarked, that the circle, which occupies the middle between theſe two extremes, is the moſt beautiful of all the elementary forms, as red is the moſt beautiful of all the primordial colours. I preſume not to ſay, with certain ancient Philoſophers, that this form muſt be the moſt beautiful, becauſe it is the figure of the Stars, which, however, would be no ſuch contemptible reaſon; but, to employ only the teſtimony of our ſenſes, it is the moſt grateful to both the eye and the touch; it is, likewiſe, the moſt ſuſceptible of motion; finally, what is no mean authority in the caſe of natural truths, it is conſidered as the moſt con-

formable

formable to the tafte of all Nations, who employ it in their ornaments, and in their architecture; and it is particularly conformable to the tafte of children, who give it the preference to every other, in the inftruments of their amufement.

It is very remarkable, that thefe five elementary forms have the fame analogies to each other which the five primordial colours have among themfelves; fo that if you proceed to their afcending generation, from the fphere toward the line, you will have forms angular, lively, and gay, which fhall terminate in the ftraight line, and of which Nature compofes fo many radiations and expanfions of figure, in the Heavens and on the Earth, fo agreeable to behold. If, on the contrary, you defcend from the fphere to the excavations of the parabola, you will be prefented with a gradation of cavernous forms, which are fo frightful in abyffes and precipices.

Farther, if you join the elementary forms to the primordial colours, term for term, you will obferve their principal character mutually ftrengthen each other, at leaft in the two extremes, and in the harmonic expreffion of the centre: for the two firft terms will give the white ray, which is the ray of light itfelf; the circular form, united to the red colour, will produce a figure analogous

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to the roſe, compoſed of ſpherical portions, with carmine tints, and, from the effect of this double harmony, deemed, in the judgment of all Nations, the moſt beautiful of flowers. Finally, black, added to the vacuity of the parabola, increaſes the gloom of retreating and cavernous forms.

With theſe five elementary forms may be compoſed figures as agreeable as the ſhades which are produced from the harmonies of the five primordial colours. So that the more there ſhall enter, into thoſe mixed figures, of the two aſcending terms of the progreſſion, the more light and gay ſuch figures will be; and the more that the two deſcending terms ſhall predominate, the more heavy and dull will be the forms. Thus, the form will be ſo much the more elegant, as the firſt term, which is the ſtraight line, ſhall have the predominance. For example, the column gives us pleaſure, becauſe it is a long cylinder, which has the circle for it's baſis, and two ſtraight lines, or a quadrilateral figure of conſiderable length, for it's elevation. But the palm-tree, of which it is an imitation, pleaſes ſtill more, becauſe the ſtellated and radiating forms of it's palms, likewiſe taken from the ſtraight line, conſtitute a very agreeable oppoſition with the roundneſs of it's ſtem; and if, to this, you unite the harmonic form by way of excellence, namely, the circular, you

you will add inexpreſſibly to the grace of this beautiful tree. This, likewiſe, Nature, who knows much more of the matter than we, has taken care to do, by ſuſpending, at the baſis of it's divergent boughs, ſometimes the oval date, and ſometimes the rounded cocoa-nut.

In general, as often as you employ the circular form, you will greatly enhance the agreeableneſs of it, by uniting it with the two contraries of which it is compoſed; for, you will then have a complete elementary progreſſion. The circular form alone, preſents but one expreſſion, the moſt beautiful of all, in truth; but united to it's two extremes, it forms, if I may ſo expreſs myſelf, an entire thought. It is from the effect which thence reſults, that the vulgar conſider the form of the heart to be ſo beautiful, as to compare to it every other beautiful and intereſting object. That is beautiful as a heart, ſay they *. This heart-form conſiſts, at it's baſis, of a projecting angle, and above, of a retreating angle; there we have the extremes:

* Is not our Author here indulging fancy, rather than following Nature? If this be an idea and expreſſion of the common people, it muſt be the commonalty of a particular country. *Heart* is, perhaps, univerſally uſed to expreſs fondneſs, affection, deſire; but to repreſent the *form* of that organ as *beautiful*, nay, the *eſſence* of beauty is, ſurely, a violent ſtretch of imagination.

H. H.

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and in it's collateral parts, of two ſpherical portions; there is the harmonic expreſſion.

It is, farther, from theſe ſame harmonies, that long ridges of mountains, overtopped by lofty peaks of a pyramidical form, ſeparated from each other by deep valleys, delight us by their gracefulneſs and majeſty. If to theſe you add rivers meandering below, radiating poplars waving on their banks, flocks of cattle and ſhepherds, you will have vales ſimilar to that of Tempe. The circular forms of the mountains, in ſuch a landſcape, are placed between their extremes, namely, the prominency of the rocks, and the cavity of the valleys. But if you ſeparate from it the harmonic expreſſions, that is, the circular wavings of thoſe mountains, together with their peaceful inhabitants, and allow the extremes only to remain, and you will then have the dreary proſpect of Cape-Horn; angular, perpendicular rocks, hanging over fathomleſs abyſſes.

If to theſe you add oppoſitions of colour, as that of ſnow on the ſummits of the duſky rocks, the foam of the billows breaking on the lurid ſhore, a pale ſun in a gloomy ſky, torrents of rain in the midſt of Summer, tremendous ſqualls of wind ſucceeded by ſullen calms, a European veſſel, on her way to ſpread deſolation over the iſlands

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of the South-Sea *, running upon a rock when it is beginning to grow dark, firing, from time to time, guns, the ſignal of diſtreſs, the noiſe of which the echos of thoſe horrid deſerts reverberate, the terrified Patagonian running in amazement to his cave; and you will have a complete view of that land of deſolation, covered over with the ſhades of death.

Of Movements.

It remains that I ſuggeſt a few reflections on the ſubject of motions. Of theſe we ſhall, in like manner, diſtinguiſh five which are fundamental: ſelf-motion, or the rotation of a body round itſelf, which ſuppoſes no change of place, and which is the principle of all motion; ſuch is, perhaps, that of the Sun; after that, the perpendicular, the circular, the horizontal, and the ſtate of

* Would not the effect of this dreadful picture have been conſiderably ſtrengthened, had our Author repreſented his European veſſel as attempting to double Cape-Horn, *on her return* from ſpreading devaſtation over the South-Seas, and making ſhipwreck on that dreary coaſt, *after* the ſcene of blood was acted? In this caſe we ſhould have had the ſtriking and inſtructive repreſentation of the connection between Human Guilt and Divine Juſtice; of the claſhing colliſion of criminality and vengeance. H. H.

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reſt. All movements whatever may be referred to theſe five. Nay, you will remark that Geometricians, who repreſent them likewiſe by figures, ſuppoſe the circular motion to be generated of the perpendicular and the horizontal, and, to make uſe of their language, produced by the diagonal of their ſquares.

I ſhall not inſiſt on the analogies of the generation of colours and forms, to thoſe of the generation of movements; and which actually exiſt, between the white colour, the ſtraight line, and ſelf-motion, or rotation; between the red colour, the ſpherical form, and circular motion; between darkneſs, vacuity, and reſt. I ſhall not pretend to unfold the infinite combinations which might reſult from the union, or oppoſition, of the correſponding terms of each generation, and of the filiations of theſe ſame terms. I leave to the Reader the pleaſure of following up this idea, and of forming to himſelf, with theſe elements of Nature, harmonies the moſt enchanting, with the additional charm of novelty. I ſhall confine myſelf, at preſent, to a few haſty obſervations reſpecting motion.

Of all movements, the harmonic, or circular motion, is the moſt agreeable. Nature has diffuſed it over moſt of her works, and has rendered even

even the vegetables, which are faſtened down to the earth, ſuſceptible of it. Our plains preſent frequent images of this, when the winds form, on the meadow, or on the corn-field, a ſeries of undulations, reſembling the waves of the ſea; or when they gently agitate, on the ſides of the lofty mountains, the towering tops of the trees, waving them about in ſegments of a circle. Moſt birds form portions of great circles as they play through the airy expanſe, and ſeem to take pleaſure in tracing, as they fly, an infinite variety of curves and ſpiral motions. It is remarkable that Nature has beſtowed this agreeable ſtyle of flying on many of the inoffenſive ſpecies of the feathered race, not otherwiſe to be prized for the exquiſiteneſs of either their ſong or their plumage. Such, among others, is the flight of the ſwallow.

The caſe is very different with reſpect to the progreſſive movements of ferocious or noxious animals. They advance leaping, ſpringing, and join to movements ſometimes extremely ſlow, others violently rapid: this is obſervable in the motion of the cat lying in wait to catch a mouſe. Thoſe of the tiger are exactly ſimilar, in his approaches upon his prey. The ſame diſcordancy is obſervable in the flight of carnivorous birds. The ſpecies of owl called the grand-duke floats through the midſt of a tranquil ſky, as if the wind carried

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him this way and that. Tempefts prefent, in the Heavens, the fame characters of deftruction. You fometimes perceive the ftormy clouds moving in oppofite directions, and with various degrees of velocity; now they fly with the rapidity of lightning, while others remain immoveable as the rock. In the tremendous hurricanes of the West-Indies, the explofion is always preceded and followed by a dead calm.

The more that a body poffeffes of felf-motion, or of rotation, the more agreeable it appears, efpecially when to this movement is united the harmonic, or circular, motion. It is for this reafon, that trees whofe leaves are moveable, fuch as the afpin and poplar, have more grace than other foreft trees, when agitated by the wind. They pleafe the eye by the balancing of their tops, and by prefenting, in turns, the two furfaces of their foliage, which difplay two different greens. They are likewife agreeable to the ear, from their imitation of the bubbling of water. From the effect of felf-motion it is, that, every moral idea out of the queftion, animals intereft us more than vegetables, becaufe they have the principle of motion within themfelves.

I do not believe there is a fingle fpot on the Earth in which there is not fome body in motion. Frequently

Frequently have I been in the midſt of vaſt ſolitudes, by day and by night, and in ſeaſons of perfect tranquillity, and I have always heard ſome noiſe or another. Often, in truth, it was only the ſound of a bird flying, or of an inſect ſtirring a leaf; but ſound always ſuppoſes motion.

Motion is the expreſſion of life. In this you ſee the reaſon why Nature has multiplied the cauſes of it in all her works. One of the great charms of a landſcape is to ſee objects in motion; and this is the very thing which the pictures of moſt of our great Maſters frequently fail to expreſs. If you except ſuch of them as repreſent tempeſts, you will find, every where elſe, their foreſts and their meadows motionleſs, and the water of their lakes congealed. Nevertheleſs, the inverſion of the leaves of trees preſenting a gray or white under-ſide; the undulations of the graſs in the vallies, and on the ridges of the mountains; thoſe which ruffle the ſmooth ſurface of the waters, and the foam which whitens the ſhores, recal, with inexpreſſible pleaſure, in a burning ſummer-ſcene, the breath ſo gentle and ſo cooling of the zephyrs. To theſe might be added, with infinite grace, and with powerful effect, the movements peculiar to the animals which inhabit them; for example, the concentric circles which the diving-bird forms on the ſurface of the water; the flight

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of a ſea-fowl taking it's departure from a hillock, with neck advancing, and legs thrown backward; that of two white turtles ſkimming ſide by ſide, in the ſhade, along the ſkirts of a foreſt; the balancing of a wagtail on the extremity of the foliage of a ruſh, bending under his weight. It might be poſſible even to repreſent the motion and the weight of a loaded carriage toiling up a hill, by expreſſing the duſt of the cruſhed pebbles which riſes up behind it's wheels. Nay, I will go ſo far as to ſay, that I think the effects of the ſinging of birds, and of the echos, might be rendered perceptible, by the expreſſion of certain characters which it is not neceſſary here to unfold.

So far are moſt of our Painters, even among thoſe whoſe talents are moſt conſpicuous, from paying attention to acceſſories ſo agreeable, that they omit them in ſubjects of which thoſe acceſſories form the principal character. For example, if they repreſent a chariot at full ſpeed, they take pains to exhibit every ſpoke of the wheels. The horſes, indeed, are gallopping, but the chariot is immoveable. The wheels of a carriage, however, that is running with a rapid motion, preſent but one ſingle ſurface; all their ſpokes are confounded to the eye. It was not thus that the Ancients, our maſters in every branch of Art, imitated Nature. *Pliny* tells us, that *Apelles*, had ſo exactly

painted

painted chariots with four horſes, that the wheels appeared to be turning round. In the curious liſt which he has tranſmitted to us of the moſt celebrated pictures of antiquity, and ſtill viewed with admiration at Rome, in his time, he particularly mentions one which repreſented women ſpinning wool, whoſe ſpindles ſeemed actually to whirl. Another was held in high eſtimation *, "in which "were repreſented two light-armed ſoldiers, the "one of whom is ſo heated with running in bat-"tle, that you ſee him ſweat, and the other, who "is laying down his arms, appears ſo exhauſted, "that you imagine you hear him panting." I have ſeen, in many modern pictures, machines in motion, wreſtlers and warriors in action, but in no one of them did I ever find attention paid to theſe effects ſo ſimple, and ſo expreſſive of the truth of Nature. Our painters conſider them as petty details, beneath the notice of a man of genius. Nevertheleſs theſe petty details are traits of character.

Marcus Aurelius, who poſſeſſed fully as much genius as any modern whatever, has very judiciouſly obſerved, that, in many caſes, it is on ſuch minuteneſſes the attention fixes, and from the contemplation of theſe the mind derives the moſt

* *Pliny*'s Natural Hiſtory. Book xxxvii. chap. 10 and 11.

pleaſure.

pleaſure. "The ſight of the ſhrivelling of ripe "figs," ſays he, "the buſhy eye-brows of a lion, "the foaming of an enraged wild-boar, the red-"diſh ſcales which riſe on the cruſt of bread "coming out of the oven, give pleaſure." This pleaſure may be accounted for in various ways: firſt, from the weakneſs of the human mind, which, in contemplating any object whatever, fixes on ſome one principal point; and then, from the deſign of Nature, who, likewiſe, in all her works, preſents to us one ſingle point of conformity, or of diſcordancy, which is, as it were, it's centre. The mind increaſes it's affection, or it's averſion, for this characteriſtic trait, the more ſimple that it is, and, in appearance, contemptible. This is the reaſon that, in eloquence, the ſhorteſt expreſſions always convey the ſtrongeſt paſſions; for all that is requiſite, as we have hitherto ſeen, in order to excite a ſenſation of pleaſure, or of pain, is to determine a point of harmony, or of diſcord, between two contraries: now, when theſe two contraries are oppoſites in nature, and are ſo, beſides, in magnitude and in weakneſs, their oppoſition redoubles, and conſequently their effect.

The effect is farther heightened, if to this is joined, eſpecially, the ſurprize of ſeeing ſtriking occaſions of hope, or of fear, produced by objects of apparently ſmall importance; for every phy-

fical

ſical effect produces, in Man, a moral feeling. For example, I have ſeen many pictures, and read many deſcriptions of battles, which attempted to inſpire horror, by repreſenting an infinite variety of inſtruments of deſtruction, and a multitude of dying and dead perſons, wounded in every poſſible manner. The leſs did I feel myſelf moved, the more I perceived the machinery employed to move me: one effect deſtroyed the other. But I have been greatly affected by reading, in *Plutarch*, the death of *Cleopatra*.

That great Painter of calamity, repreſents the Queen of Egypt meditating, in the tomb of *Anthony*, on the means of eluding the triumph of *Auguſtus*. A peaſant brings her, with permiſſion of the guards on duty at the entrance of the tomb, a baſket of figs. The moment that the clown has retired, ſhe haſtens to uncover the baſket, and perceives the aſpic, which, by her contrivance, had been introduced among the figs, to put a period to her miſerable life. This contraſt, a woman being the ſubject, of liberty and ſlavery, of royal power and annihilation, of voluptuouſneſs and death; thoſe leaves and fruits amidſt which ſhe perceives only the head and ſparkling eyes of a puny reptile, prepared to terminate intereſts of ſuch "great pith and moment;" and which ſhe thus

thus addreſſes, *There you are!* all theſe oppoſitions, one after another, make you ſhudder.

But, in order to render the perſon itſelf of *Cleopatra* intereſting, there is no occaſion to repreſent her to yourſelf, as our Painters and Sculptors exhibit her, an academic figure deſtitute of expreſſion; a ſtrapping virago, robuſt, and replete with health, with large eyes, turned toward Heaven, and wearing round her large and brawny arm a ſerpent twiſted, like a bracelet. This is by no means a repreſentation of the little, voluptuous, Queen of Egypt, who had herſelf carried, as I before mentioned, packed up in a bundle of goods, on the ſhoulders of *Apollodorus*, to keep a ſtolen aſſignation with *Julius Ceſar*; at another time walking the ſtreets of Alexandria by night, with *Anthony*, diſguiſed as a ſempſtreſs, rallying him, and inſiſting that his jeſts, and ſtyle of humour, ſmelt ſtrongly of the ſoldier. Still leſs is it a repreſentation of the unfortunate *Cleopatra*, reduced to the extreme of calamity, dragging up, by means of cords and chains, with the aſſiſtance of two of her women, through the window of the monument in which ſhe had taken refuge, with her head downward, without ever letting go her hold, ſays *Plutarch*, that very *Anthony*, covered over with blood, who had run himſelf through with his own ſword, and

who

who ſtruggled with all his remaining ſtrength to get up, and expire in her arms.

Details are by no means to be deſpiſed; they are frequently traits of character. To return to our Painters and Sculptors; if they with-hold the expreſſion of motion to landſcapes, to wreſtlers, and to chariots in the courſe, they beſtow it on the portraits and the ſtatues of our great Men and Philoſophers. They repreſent them as Angels ſounding the alarm to judgment, with hair flying about, with wild wandering eyes, the muſcles of the face in a ſtate of convulſion, and their garments fluttering in the wind. Theſe, they tell us, are the expreſſions of genius. But perſons of genius, and great Men, are not bedlamites. I have ſeen ſome of their portraits, on antiques. The medals of *Virgil*, of *Plato*, of *Scipio*, of *Epaminondas*, nay, of *Alexander*, repreſent them with a ſerene and tranquil air. It is the property of inanimate matter, of vegetables, and of mere animals, to obey all the movements of Nature; but it is that of a great Man, in my opinion, to have his emotions under command, and it is only in ſo far as he exerciſes this empire, that he merits the name of Great.

I have made a ſhort digreſſion from my ſubject, in order to ſuggeſt a few leſſons of *conformity* to Artiſts,

Artiſts, who, I am well aware, will find it much more difficult to execute, than it is eaſy for me to criticize. God forbid that any thing I have ſaid ſhould give a moment's pain to men whoſe works have ſo frequently given me exquiſite pleaſure. It was ſimply my wiſh, to caution the ingenious againſt the academic manner which fetters them, and to ſtimulate them to tread in the ſteps of Nature, and to purſue that track as far as genius can carry them.

This would be the place to ſpeak of Muſic, for ſounds are movements merely: but perſons of much greater ability than I dare pretend to, have treated this noble Art with conſummate ſkill. If any foreign teſtimony could farther confirm me in the certainty of the principles which I have hitherto laid down, it is that of Muſicians of the higheſt reputation, who have reſtricted harmonic expreſſion to three ſounds. I might, as they have done, reduce to three terms the elementary generations of colours, of forms, and of motions; but if I am not miſtaken, they themſelves have omitted, in their fundamental baſis, the generative principle, which is *ſound* properly ſo called, and the negative term, which is ſilence; eſpecially as this laſt produces effects ſo powerful in the movements of Muſic.

These

These proportions might be extended to the progressions of tasting, and it might be demonstrated, that the most agreeable of them have similar generations; as we know, by experience, to be the case with regard to most fruits, whose different stages of maturity successively present five savours, namely, the acid, the sweet, the sugary, the vinous, and the bitter. They are acid while growing, sweet as they ripen, sugary in a state of perfect maturity, vinous in their fermentation, and bitter in a state of dryness. Farther, we should find that the most agreeable of these savours, namely, the sugary, is that which occupies the middle place in this progression, of which it is the harmonic term; that, from it's nature, it forms new harmonies, by a combination with it's extremes; for the beverages which are most grateful to the palate, consist of acid and sugar, as the refreshing liquors prepared with citron-juice; or of sugar and bitter, such as coffee. But while I am endeavouring to open new paths to Philosophy, it is no part of my intention to present new combinations to voluptousness.

Though I have a thorough conviction of the truth of these elementary generations, and am able to support them with a multitude of proofs which I have collected, in the tastes of polished, and of savage, Nations, but which time permits me not, at present,

prefent, to exhibit; it would, however, be a matter of no furprize to me, fhould many of my Readers diffent from what I have advanced. Our natural taftes are perverted from our infancy, by prejudices which determine our phyfical fenfations, much more powerfully than thefe laft give direction to our moral affections. More than one Churchman confiders violet as the moft beautiful of colours, becaufe his Bifhop wears it: more Bifhops than one give fcarlet the preference, becaufe it is the Cardinal's colour; and more than one Cardinal, undoubtedly, would rather be dreffed in white, becaufe this colour is appropriated to the Head of the Church. A foldier, frequently, looks upon the red as the moft beautiful of all ribbons; but his fuperior officer prefers the blue. Our temperaments, as well as our conditions, have an influence upon our opinions.

Gay people prefer lively colours to every other; perfons of fenfibility, thofe which are delicate; the melancholy affume the dufky. Though I myfelf confider red as the moft beautiful of colours, and the fphere as the moft perfect of forms; and though I am bound more than any other man, ftrenuoufly to adhere to this order, becaufe it is that of my fyftem, I prefer to the full red, the carmine colour, which has a flight fhade of violet; and to the fphere, the oval, or elliptical form. It likewife appears

appears to me, if I may venture to ſay ſo, that Nature has beſtowed, by way of preference, both of theſe modifications on the roſe, at leaſt before it is completely expanded. Farther, I like violet flowers better than white, and ſtill much better than ſuch as are yellow. I prefer a branch of lilach in bloom to a pot of gilly-flower *, and a Chineſe daiſy, with it's diſk of a ſmoky yellow, it's rumpled ſhaggy down, it's violet and grave petals, to the moſt flaſhy cluſter of ſun-flowers in the Luxemburg.

I am perſuaded that I have theſe taſtes in common with many other perſons, and that, if we form a judgment of men from the colour of their clothes, by far the majority is rather ſerious than gay. I am likewiſe of opinion, that Nature, for to her we muſt ever have recourſe in order to be aſſured that we are right, gives moſt of her phyſical beauties a tendency to melancholy. The plaintive notes of the nightingale, the deep ſhades of the foreſt, the ſober luſtre of the Moon, inſpire

* Dr. *Johnſon* tells us that *Gilly-flower* is a corruption in orthography for *July-flower*. With due reſpect to ſo great an Etymologiſt, this I take to be a miſtake. The flowering of the plant is by no means limited to the month of July. The Engliſh term is derived from the French word *Giroflier*, (the clove-plant) ; every one knows the ſtriking analogy between the ſavour of that ſpice, and the ſmell of the Gilly-flower. H. H.

no gaiety, neverthelefs they intereft us, and that deeply. I feel much more emotion in contemplating the fetting than the rifing Sun. In general, we are pleafed by gay and fprightly beauties, but we are melted and touched only by thofe which are melancholy.

I fhall endeavour, in another place, to unfold the caufes of thefe moral affections. They ftand in connection with laws more fublime than any phyfical laws: while thefe laft amufe our fenfes, the others fpeak to the heart, and calmly admonifh us, that Man is ordained to a much higher deftination.

It is very poffible that I may be miftaken in the order of thofe generations, and may have tranfpofed their terms. But all that I, from the beginning, propofed, was to open fome new paths into the Study of Nature. It is fufficient for my purpofe, that the effect of thefe generations is generally acknowledged. Men more enlightened will eftablifh the filiations of them in a more luminous order. All that I have hitherto faid on this fubject, or hereafter may fay, is reducible to this great Law: Every thing in Nature is formed of contraries: it is from their harmonies that the fentiment of pleafure refults, and out of their oppofitions iffues the fentiment of pain.

This

This Law, as we ſhall ſee, extends alſo to morals. Every truth, the truths of fact excepted, is the reſult of two contrary ideas. From this it follows, that as often as we decompound a truth, by dialectics, we divide it into the two ideas of which it is conſtituted; and if we confine ourſelves to one of it's elementary ideas, as to a detached principle, and deduce conſequences from it, we ſhall convert it into a ſource of endleſs diſputation; for the other elementary idea will abundantly ſupply conſequences diametrically oppoſite to the perſon who is diſpoſed to purſue them; and theſe conſequences are themſelves ſuſceptible of contradictory decompoſitions, which go on without end. The Schools are admirably adapted to inſtruct us how to manage this proceſs; and thither are we ſent to form our judgment. There are we taught to ſeparate the moſt evident truths not only into two, but, as *Hudibras* ſays, into four. If, for example, ſome one of our Logicians, obſerving that cold had an influence on vegetation, ſhould think proper to maintain, that cold is the only cauſe of it, and that heat is even inimical to it, he would take care, no doubt, to quote the efflореſcences and the vegetations of ice, the growth, the verdure, and the flowering of moſſes in Winter; plants burnt up by the heat of the Sun, in Summer, and many other effects relative to his theſis. But his antagoniſt, availing himſelf, on his ſide, of the influences

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of Spring, and of the ravages of Winter, would clearly demonſtrate, that heat alone gives life to the vegetable world. But the truth is, after all, that heat and cold combined form one of the principles of vegetation, not only in temperate climates, but to the very heart of the Torrid Zone.

It may confidently be affirmed, that all the diſorders, in both Phyſics and Morals, are neither more nor leſs than the claſhing oppoſition of two contraries. If men would pay attention to this Law, there would be a ſpeedy end put to moſt of their wranglings and miſtakes; for it may be urged, that, every thing being compoſed of contraries, whoever affirms a ſimple propoſition, is only half right, as the contrary propoſition has equally an exiſtence in nature.

There is, perhaps, in the World but one intellectual truth, pure, ſimple, and which does not admit of a contrary idea; it is the exiſtence of GOD. It is very remarkable, that thoſe who have denied it, adduce no other proofs to ſupport their negation, but the apparent diſorders of Nature, the extreme principles of which alone they contemplated: ſo that they have not demonſtrated, that no God exiſted, but that He was not intelligent, or that He was not good. Their error, accordingly, proceeds from their ignorance of natural Laws. Beſides,

ſides, their arguments have been founded, for the moſt part, on the diſorders of men; who exiſt in an order widely different from that of Nature, and who alone, of all beings endowed with perception, have been committed to their own direction.

As to the nature of GOD, I know that faith itſelf preſents Him to us, as the harmonic principle by way of ſupreme excellence, not only with relation to all that ſurrounds Him, of which He is the Creator and Mover, but even in his eſſence divided into three perſons. *Boſſuet* has extended theſe harmonies of DEITY to Man, by tracing in the operations of the human Soul, ſome conſonancy to the Trinity, of which it is the image. Theſe lofty ſpeculations are, I acknowledge, infinitely above my reach. Nay, I am filled with admiration to think, that the DIVINITY ſhould have permitted beings ſo weak, and ſo tranſitory, as we are, to take ſo much as a glimpſe of his omnipotence on this Earth; and that he ſhould have veiled, under combinations of matter, the operations of his infinite Intelligence, in order to adapt it to our perception. A ſingle act of his will was ſufficient to call us into being; the ſlighteſt communication of his works is ſufficient to illuminate our reaſon; but I have a thorough perſuaſion, that if the ſmalleſt ray of his divine eſſence were to communicate itſelf directly to us, in a human body, we muſt be annihilated.

OF CONSONANCES.

Confonances are repetitions of the fame harmonies. They increafe our pleafures by multiplying them, and by transferring the enjoyment of them to new fcenes. They farther communicate pleafure, by rendering it perceptible to us, that the fame Intelligence has prefided over the different plans of Nature, as it prefents to us, throughout, fimilar harmonies. Confonances, accordingly, confer more pleafure than fimple harmonies, becaufe they convey to us the fentiments of extenfion, and of Divinity, fo congenial to the nature of the human Soul. Natural objects excite in us a certain degree of fatisfaction, only in fo far as they awaken and difplay an intellectual feeling.

We find frequent examples of confonances in Nature. The clouds of the Horizon frequently imitate, on the Sea, the forms of mountains, and the afpects of land, and this fo exactly, as often to deceive the moft experienced mariners. The waters reflect from their heaving bofom, the heavens, the hills, the forefts. The echoing rocks, in their turn, repeat the murmuring of the waters. As I was walking one day, in the Païs de Caux, along the fea-fide, and confidering the reflexes of the fhore

in the boſom of the water, I was not a little aſtoniſhed to hear other waves emitting a dying ſound behind me. I turned round, and perceived only a high and ſteep ſhore, the echos of which were repeating the noiſe of the waves. This double conſonance appeared to me wonderfully agreeable. You would have ſaid there was a mountain in the ſea, and a ſea in the mountain.

Thoſe tranſpoſitions of harmony, from one element to another, communicate inexpreſſible pleaſure. Nature has multiplied them, accordingly, with boundleſs liberality, not only in fugitive images, but by permanent forms. She has repeated, in the midſt of the Seas, the forms of Continents, in thoſe of Iſlands; moſt of which, as we have ſeen, have peaks, mountains, lakes, rivers, and plains, proportioned to their extent, as if they were little Worlds. On the other hand, ſhe repreſents in the midſt of the Land, the baſons of the vaſt Ocean, in mediterraneans, and in great lakes, which have their ſhores, their rocks, their iſles, their volcanos, their currents, and, ſometimes, a flux and reflux peculiar to themſelves, and which is occaſioned by the effuſions from icy mountains, at the baſis of which they are commonly ſituated, as the currents and tides of the Ocean are, by thoſe of the Poles.

It is ſingularly remarkable, that the moſt beautiful harmonies are thoſe which have the moſt conſonances. Nothing in the World, for example, is more beautiful than the Sun, and nothing in nature is ſo frequently repeated as his form, and his light. He is reflected in a thouſand different manners by the refractions of the air, which every day exhibit him above all the horizons of the Globe, before he is actually riſen, and for ſome time after he has ſet; by the parhelia which reflect his diſk, ſometimes twice or thrice, in the miſty clouds of the North; by the rainy clouds, in which his refracted rays trace an arch ſhaded with a thouſand various colours; and by the waters, whoſe reflexes exhibit him in an infinite number of places where he is not, in the boſom of meadows, amidſt flowers beſprinkled with dew, and in the ſhade of green foreſts. The dull and inert earth, too, reflects him in the ſpecular particles of gravels, of micas, of cryſtals, and of rocks. It preſents to us the form of his diſk, and of his rays, in the diſks and petals of the myriads of radiated flowers with which it is covered. In a word, this beautiful ſtar has multiplied himſelf to infinity, with varieties of which we know nothing, in the innumerable ſtars of the firmament, which he diſcovers to us, as ſoon as he quits our Horizon; as if he had withdrawn himſelf from the conſo-

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nances of the earth, only to diſplay to the delighted eye thoſe of Heaven.

From this Law of conſonance it follows, that what is beſt and moſt beautiful in Nature, is likewiſe moſt common, and the moſt frequently repeated. To it we muſt aſcribe the varieties of ſpecies in each genus, which are ſo much the more numerous, in proportion as that genus is uſeful. For example, there is no family in the vegetable kingdom ſo neceſſary as that of the gramineous, on which ſubſiſt not only all the quadrupeds, but endleſs tribes of birds and inſects; and there is no one, accordingly, whoſe ſpecies are ſo varied. We ſhall take notice, in the Study on Plants, of the reaſons of this variety. I ſhall only remark, in this place, that it is in the gramineous families Man has found the great diverſity of nutritious grains, from which he derives his chief ſubſiſtence; and that from reaſons of conſonance, not only the ſpecies, but ſeveral of the genera, nearly approach to each other, in order that they may preſent ſimilar ſervices to Man, under Latitudes entirely different. Thus, the millet of Africa, the maize of Braſil, the rice of Aſia, the palm-ſago of the Moluccas, the trunks of which are filled with alimentary flower, are in conſonance with the corns of Europe. We ſhall find conſonances of another kind in the ſame places, as if it had been the intention

tention of Nature to multiply her benefits, by varying only the form of them, without changing almoſt any thing of their qualities. Thus, in our gardens, what a delightful and beneficial conſonancy between the orange and citron trees, the apple and the pear, the walnut and the filbert; and in our farm-yards, between the horſe and the aſs, the gooſe and the duck, the cow and the ſhe-goat.

Farther, each genus is in conſonancy with itſelf, from difference of ſex. There are, however, between the ſexes, contraſts which give the greateſt energy to their loves, from the very oppoſition of contraries, from which, as we have ſeen, all harmony takes it's birth: but without the general conſonancy of form which is between them, ſenſible beings of the ſame genus never would have approached each other. Without this, one ſex would have for ever remained a ſtranger to the other. Before each of them could have obſerved what the other poſſeſſed that correſponded to it's neceſſities, the time of reflection would have abſorbed that of love, and, perhaps, have extinguiſhed all deſire of it. It is conſonancy which attracts, and contraſt which unites them. I do not believe that there is in any one genus, an animal of one ſex entirely different from one of the other, in exterior forms; and if ſuch differences are actually

tually found, as certain Naturalifts pretend, in fe-veral fpecies of fifhes and infects, I am fully perfuaded, that Nature placed the habitation of the male and of the female very clofe to each other, and planted their nuptial couch at no great diftance from their cradle.

But there is a confonancy of forms, much more intimate ftill than even that of the two fexes, I mean the duplicity of the organs which exifts in each individual. Every animal is double. If you confider his two eyes, his two noftrils, his two ears, the number of his legs and arms difpofed by pairs, you would be tempted to fay, here are two animals glued the one to the other, and united under the fame fkin. Nay, the parts of his body which are fingle, as the head, the tail, and the tongue, appear to be formed of two halves, compacted together by feams. This is not the cafe with regard to the members properly fo called: for example, one hand, one ear, one eye, cannot be divided into two fimilar halves; but the duplicity of form in the parts of the body, diftinguifhes them effentially from the members: for the part of the body is double, and the member is fingle: the former is always fingle and alone, and the latter always repeated. Thus, the head, and the tail, of an animal are parts of it's body, and the legs and ears of it are members.

This

'This Law of Nature, one of the moſt wonderful, and one of the leaſt obſerved, deſtroys, at one blow, all the hypotheſes which introduce chance into the organization of beings; for, independantly of the harmonies which it preſents, it doubles at once the proofs of a Providence, which did not deem it ſufficient to give one principal organ to each animal, adapted to each element in particular, ſuch as the eye, for the light of the Sun; the ear, for the ſounds of the air; the foot, for the ground which is to ſupport it: but determined, beſides, that every animal ſhould have each of thoſe organs by pairs.

Certain Sages have conſidered this admirable duplication as a pre-diſpoſition of Providence, in order that the animal might have a ſubſtitute always at hand, to ſupply the loſs of one of the double organs, expoſed as they are to ſo many accidents; but it is remarkable, that the interior parts of the body, which, at firſt ſight, appear to be ſingle, preſent, on cloſer examination, a ſimilar duplicity of forms, even in the human body, where they are more confounded than in other animals. Thus the five lobes of the lungs, one of which has a kind of diviſion; the fiſſure of the liver; the ſupernal ſeparation of the brain, by the reduplication of the *dura-mater*; the *ſeptum lucidum*, ſimilar to a leaf of talc, which ſeparates the two anterior ventricles

tricles of it; the two ventricles of the heart; and the divisions of the other *viscera*. announce this double union, and seem to indicate, that *the very principle of life, is the consonance of two similar harmonies* *.

There farther results from this duplicity of organs, a much more extensive range of utility than if they had been single. Man, by the assistance of

* Each organ is itself in opposition with the element for which it is destined; so that from their mutual opposition arises a harmony which constitutes the pleasure enjoyed by that organ. This is very remarkable, and confirms the principles which we have laid down. Thus, the organ of vision, adapted principally to the Sun, is a body singularly opposite to him, in that it is almost entirely aqueous. The Sun emits luminous rays; the eye, on the contrary, is surrounded by a dusky eye-brow which overshadows it. The eye is, besides, veiled with a lid which can be raised and dropped at pleasure; and it farther opposes to the whiteness of the light, a tunic entirely black, called the *uvea*, which clothes the extremity of the optic nerve.

The other parts of the body present, in like manner, oppositions to the action of the elements to which they are adapted. Accordingly, the feet of animals which scramble among rocks are provided with pincers, as those of tygers and lions. Animals which inhabit cold countries, are clothed with warm furs, and so on. But, with all this, we must not always reckon on finding these contraries of the same species in every animal. Nature possesses an infinite variety of means, for producing the same effects, conformably to the necessities of every individual.

two eyes, can take in, at once, more than half of the Horizon; with a ſingle one, he could ſcarcely have embraced a third part. Provided with two arms, he can perform an infinite number of actions which he never could have accompliſhed with one only; ſuch as raiſing upon his head a load of conſiderable ſize and weight, and clambering up a tree. Had he been placed upon one leg, not only would his poſition be much more unſteady than upon two, but he would be unable to walk; his progreſſive motion would be reduced to crawling, or hopping. This method of advancing would be entirely diſcordant to the conſtitution of the other parts of his body, and to the variety of ſoils over which he is deſtined to move.

If Nature has given a ſingle exterior organ to animals, ſuch as the tail, it is becauſe the uſe of it, being extremely limited, extends but to a ſingle action to which it is fully equivalent. Beſides, the tail, from it's ſituation, is ſecured againſt almoſt every danger. Farther, hardly any but the very powerful animals have a long tail, as bulls, horſes, and lions. Rabbits and hares have it very ſhort. In feeble animals, which have one of conſiderable length, as the thornback, it is armed with prickles, or elſe it grows again, if it happens to be torn off by an accident, as in the caſe of the lizard. Finally,

nally, whatever may be the ſimplicity of it's uſe, this is remarkable, it is formed of two ſimilar halves, as the other parts of the body.

There are other interior conſonances, which collect diagonally, if I may uſe the expreſſion, the different organs of the body, in order to form but one only and ſingle animal of it's two halves. I leave to Anatomiſts the inveſtigation of this incomprehenſible connection: but, be their knowledge ever ſo extenſive, I much doubt whether they will ever be able to trace the windings of this labyrinth. Why, for inſtance, ſhould the pain which attacks a foot, make itſelf felt, ſometimes, in the oppoſite part of the head, and *vice verſâ?* I have ſeen a very aſtoniſhing proof of this conſonance in the caſe of a ſerjeant, who is ſtill living, I believe, in the Hoſpital of Invalids. This man having a fencing bout one day with a comrade, who, as well as himſelf, made uſe of his undrawn ſword, received a thruſt in the lacrymal angle of the left eye, which immediately deprived him of his ſenſes. On coming to himſelf, which did not happen till ſeveral hours afterward, he was found to be completely paralytic in his right leg and right arm, and no medical aſſiſtance has ever been able to reſtore the uſe of them *.

* This ſoldier was of Franche-Comté. I never ſaw him but once, and I have forgotten his name, as well as that of the regi-

ment

I muſt here obſerve, that the cruel experiments every day made on brutes, in the view of diſcovering theſe ſecret correſpondencies of Nature, ſerve only to ſpread a thicker veil over them; for their muſcles, contracted by terror and pain, derange the courſe of the animal ſpirits, accelerate the velocity of the blood, put the nerves into a ſtate of convulſion, and tend much rather to unhinge the animal economy, than to unfold it. Theſe barbarous means, employed by our modern Phyſics, have an influence ſtill more fatal on the morals of thoſe who practiſe them; for, together with falſe information, they inſpire them with the moſt atrocious of all vices, which is cruelty.

If Man may preſume to put queſtions to Nature reſpecting the operations which ſhe is pleaſed to conceal, I ſhould prefer the road of pleaſure to

ment to which he belonged; but I have not loſt the recollection of his virtuous conduct, which was reported to me on undoubted authority. When the accident above related ſent him to the Invalids, he remembered that, in his capacity of ſerjeant, he had inveigled, at the inſtigation of his captain, in a country village, a young fellow to enliſt, who was the only ſon of a poor widow, and who was killed three months afterward in an engagement. The ſerjeant recollecting this act of cruelty and injuſtice, formed the reſolution of abſtaining from wine. He ſold his allowance as a penſioner in the Hoſpital of the Invalids, and remitted the amount every ſix months to the mother whom he had robbed of her ſon

that

that of pain. Of the propriety of this ſentiment, I was witneſs to an inſtance, at a country-ſeat in Normandy. Walking in one of the adjoining fields, with a young gentleman, who was the pro prietor of them; we perceived bulls a-fighting. He ran up to them, with his ſtaff brandiſhed, and the poor animals inſtantly gave up their contention. He preſently went up to the moſt ferocious of the tribe, and began to tickle him, with his fingers, at the root of the tail. The animal, whoſe eyes were ſtill inflamed with rage, became motionleſs, with outſtretched neck, expanded noſtrils, tranſpiring the air with a ſatisfaction which moſt amuſingly demonſtrated the intimate correſpondence between this extremity of his body and his head.

The duplicity of organs is farther obſervable, even in vegetables, eſpecially in their eſſential parts, ſuch as the *antheræ* of the flowers, which are double bodies; in their petals, one half of which correſponds exactly to the other; in the lobes of their ſeed, &c. A ſingle one of theſe parts, however, appears to me ſufficient, for the expanſion and the generation of the plant. This obſervation might be extended to the very leaves, the two halves of which are correſpondent in moſt vegetables; and if any one of them recedes from this order,

order, it is, undoubtedly, for ſome particular reaſon, well worthy of inveſtigation.

Theſe facts confirm the diſtinction which we have made between the parts and the members of a body; for in the leaves where this duplicity occurs, the vegetative faculty is uſually to be found, which is diffuſed over the body of the vegetable itſelf. So that if you carefully replant thoſe leaves, and at the proper ſeaſon, you will ſee the complete vegetable thence re-produced. Perhaps, it is becauſe the interior organs of the tree are double, that the principle of vegetative life is diffuſed even over it's ſlips, as we ſee it in a great number which ſprout again from one branch. Nay, there are ſome which have the power of perpetuating themſelves by cuttings ſimply. Of this we have a noted inſtance in the memoirs of the Academy of Sciences. Two ſiſters, on the death of their mother, became heireſſes of an orange-tree. Each of them inſiſted on having it thrown into her allotment. At length, after much wrangling, and neither being diſpoſed to reſign her claim, it was ſettled that the tree ſhould be cleft in two, and each take her half. The orange-tree, accordingly, underwent the judgment pronounced by *Solomon* on the child. It was cleft aſunder; each of the ſiſters replanted her own half, and, wonderful to be told! the tree, which

which had been ſeparated by ſiſterly animoſity, received a new clothing of bark from the benignant hand of Nature.

It is this univerſal conſonance of forms which has ſuggeſted to Man the idea of ſymmetry. He has introduced it into moſt of his works of art, and particularly into Architecture, as an eſſential part of order. To ſuch a degree, in fact, is it the work of intelligence and of combination, that I conſider it as the principal character by which we are enabled to diſtinguiſh all organized bodies from ſuch as are not ſo, and are only reſults of a fortuitous aggregation, however regular their aſſemblage may appear; ſuch as thoſe which produce cryſtallizations, efflореſcences, chemical vegetations, and igneous effuſions.

It was in conformity to theſe reflections that, on conſidering the Globe of the Earth, I obſerved, with the greateſt ſurprize, that it too preſented, like every organized body, a duplicity of form. From the beginning it had been my thought, that this Globe being the production of an Intelligence, order muſt of neceſſity pervade it. I had diſcerned, and admired, the utility of iſlands, and even of that of banks, of ſhelves, and of rocks, to protect the parts of the Continents which are moſt expoſed to the Currents of the Ocean, at the ex-

tremities of which they are always ſituated. I had, in like manner, diſcerned the utility of bays, which are, on the contrary, removed from the Currents of the Ocean, and hollowed into deep retreats to ſhelter the diſcharge of rivers, and to ſerve, by the tranquillity of their waters, as an aſylum to the fiſhes, which in all ſeas retire thither in ſhoals, to collect the ſpoils of vegetation, and the alluvions of the Land, which are there diſgorged by the rivers. I had admired, in detail, the proportions of their different fabrics, but had formed no conception of their combination. My mind was bewildered amidſt ſuch a multiplicity of cuttings and carvings, of land and ſea; and I ſhould, without heſitation, have aſcribed the whole to chance, had not the order, which I perceived in each of the parts, ſuggeſted to me the poſſibility, that there might exiſt order alſo, in the totality of the Work.

I am now going to diſplay the Globe under a new aſpect. The Reader will, I hope, forgive this digreſſion, which exhibits to him one little fragment of the materials I had laid up, for a geographical ſtructure, but which tends to prove the univerſality of the natural Laws, whoſe exiſtence I am endeavouring to eſtabliſh. I ſhall be, as uſual, rapid and ſuperficial: but it is a matter of very inferior importance to myſelf, ſhould I enfeeble ideas,

ideas, which I have not been permitted to arrange in their natural order, provided I am enabled to tranſmit the germ of them into a head ſuperior to my own.

I firſt endeavoured to find out conſonances between the northern and ſouthern halves of the Globe. But ſo far from diſcovering reſemblances between them, I perceived nothing but oppoſitions; the northern being, if I may ſo expreſs myſelf, a terreſtrial Hemiſphere only, and the ſouthern a maritime; and ſo different from each other, that the Winter of the one is the Summer of the other; and that the ſeas of the firſt Hemiſphere ſeem to be oppoſed to the lands, and to the iſlands, which are ſcattered over the ſecond. This contraſt preſented to me another analogy with an organized body: for, as we ſhall ſee in the following articles, every organized body has two halves in contraſt, as there are two in conſonance.

I found in it then, under this new aſpect, ſomething like an analogy with an animal, the head of which ſhould have been to the North, from the attraction of the magnet, peculiar to our Pole, which ſeems there to fix a *ſenſorium*, as in the head of an animal: the heart under the Line, from the conſtant heat which prevails in the Torrid Zone, and which ſeems to determine this as the region of the

the heart; finally, the excretory organs in the southern part, in which the greatest Seas, the vast receptacles of the alluvions of Continents, are situated; and where we, likewise, find the greatest number of volcanos, which may be considered as the excretory organs of the Seas, whose bitumens and sulphurs they are incessantly consuming. Besides, the Sun, who sojourns five or six days longer in the Northern Hemisphere, seemed to present to me a farther, and a more marked, resemblance to the body of an animal, in which the heart, the centre of heat, is somewhat nearer to the head, than to the lower extremities.

Though these contrasts appeared to me sufficiently determinate to manifest an order on the Globe, and though I perceived something similar in vegetables, distinguished as they are into two parts, opposite in functions and in forms, such as the leaves and the roots; I was afraid of giving scope to my imagination, and of attempting to generalize, through the weakness of the human mind, the Laws of Nature peculiar to each existence, by extending them to kingdoms, which were not susceptible of the application.

But I ceased to doubt of the general order of the Globe, when, with two halves in contrast, I found two others in consonance. I was struck with

with aſtoniſhment, I muſt confeſs, when I obſerved, in the duplicity of forms which conſtitute it, members exactly repeated on that ſide and on this.

The Globe, if we conſider it from Eaſt to Weſt, is divided, as all organized bodies are, into two ſimilar halves, which are the Old and the New World. Each of their parts mutually correſponds in the eaſtern and weſtern Hemiſpheres; ſea to ſea, iſland to iſland, cape to cape, peninſula to peninſula. The lakes of Finland, and the gulf of Archangel, correſpond to the lakes of Canada and Baffin's-bay; Nova Zembla to Greenland; the Baltic to Hudſon's-bay; the Iſlands of Great-Britain and Ireland, which cover the firſt of theſe mediterraneans, to the Iſlands of Good-Fortune and Welcome, which protect the ſecond; the Mediterranean, properly ſo called, to the gulf of Mexico, which is a kind of mediterranean, formed, in part, by iſlands. At the extremity of the Mediterranean, we find the iſthmus of Suez in conſonance with the iſthmus of Panama, placed at the bottom of the gulf of Mexico. Conjoined by thoſe iſthmuſes, the peninſula of Africa preſents itſelf in the Old World, and the peninſula of South-America in the New. The principal rivers of theſe diviſions of the Globe front each other in like manner; for the Senegal diſcharges itſelf into the Atlantic, directly oppoſite to the river of the Amazons. Finally, each of theſe peninſulas, ad-

vancing toward the South Pole, terminates in a cape equally noted for violent tempefts, the Cape of Good-Hope, and Cape-Horn.

There are, befides, between thefe two Hemifpheres, a variety of other points of confonance, on which I fhall no longer infift. Thefe different particulars, it is admitted, do not correfpond in exactly the fame Latitudes: but they are difpofed in the direction of a fpiral line winding from Eaft to Weft, and extending from North to South, fo that thefe correfponding points proceed in a regular progreffion. They are nearly of the fame height, fetting out from the North, as the Baltic and Hudfon's-bay; and they lengthen in America, in proportion as it advances toward the South. This progreffion makes itfelf farther perceptible along the whole length of the Old Continent, as may be feen from the form of it's Capes, which, taking the point of departure from the Eaft, lengthen fo much the more toward the South, as they advance toward the Weft; fuch as the Cape of Kamchatka, in Afia; Cape Comorin, in Arabia; the Cape of Good-Hope, in Africa; and, finally, Cape-Horn, in America.

Thefe differences of proportion are to be accounted for from this, that the two terreftrial Hemifpheres are not projected in the fame manner; for

for the Old Continent has it's greateſt breadth from Eaſt to Weſt, and the New has it's greater extent from North to South; and it is manifeſt, that this difference of projection has been regulated by the AUTHOR of Nature, for the ſame reaſons which induced Him to beſtow double parts on animals and on vegetables, in order that, if neceſſity required, the one might ſupply what was deficient in the other, but principally that they might be of mutual aſſiſtance.

If, for example, there exiſted only the Ancient Continent, with the South-Sea alone, the motion of that Sea being too much accelerated, under the Line, by the regular winds from the Eaſt, would, after having ſurrounded the Torrid Zone, advance with incredible fury, and attack tremendouſly the Land of Japan: for the ſize of the billows of a Sea, is always in proportion to it's extent. But from the diſpoſition of the two Continents, the billows of the great eaſtern Current of the Indian Ocean, are partly retarded by the archipelagos of the Moluccas and Philippine Iſlands; they are ſtill farther broken by other iſlands, ſuch as the Maldivia, by the Capes of Arabia, and by that of Good-Hope, which throws them back toward the South. Before they reach Cape-Horn, they have to encounter new obſtacles, from the Current of the South Pole, which then croſſes their courſe, and

and the change of the monſoon, which totally deſtroys the cauſe of the commotion at the end of ſix months. Thus, there is not a ſingle Current, be it eaſterly or northerly, which pervades ſo much as a quarter of the Globe, in the ſame direction. Beſides, the diviſion of the parts of the Globe into two, is ſo neceſſary to it's general harmony, that if the channel of the Atlantic Ocean, which ſeparates them, had no exiſtence, or were in part filled up, according to a ſuppoſition once entertained, by the great iſland Atlantis *, all the oriental rivers of America, and all the occidental of Europe would be dried up; for thoſe rivers owe their ſupplies only to the clouds which emanate from the Sea. Beſides, the Sun enlightening, on our ſide, only one terreſtrial Hemiſphere, the mediterraneans of which would diſappear, muſt burn it up with his rays; and at the ſame time, as he warmed, on the other ſide, a Hemiſphere of water only, moſt of the iſlands of which would ſink of courſe, becauſe the quantity of that Sea muſt be increaſed by the ſubtraction of ours, an immenſity of vapour would ariſe, and go merely to waſte.

It would appear that, from theſe conſiderations, Nature has not placed in the Torrid Zone the

* A fabulous iſland imagined by *Plato*, as has been demonſtrated by many learned men, allegorically to repreſent the Athenian Government.

greateſt

greateſt length of the Continents, but only the mean breadth of America and of Africa, becauſe the action of the Sun would there have been too vehement. She has placed there, on the contrary, the longeſt diameter of the South-Sea, and the greateſt breadth of the Atlantic Ocean, and there ſhe has collected the greateſt quantity of iſlands in exiſtence. Farther, ſhe has placed in the breadth of the Continents, which ſhe has there lengthened out, the greateſt bodies of running water that are in the World, all iſſuing from mountains of ice; ſuch as the Senegal and the Nile, which iſſue from the mountains of the Moon in Africa; the Amazon and the Oroonoko, which have their ſources in the Cordeliers of America.

Again, it is for this reaſon that ſhe has multiplied, in the Torrid Zone, and in it's vicinity, lofty chains of mountains covered with ſnow, and that ſhe directs thither the winds of the North Pole and of the South Pole, of which the Trade-winds always partake. And it is very remarkable, that ſeveral of the great rivers which flow there, are not ſituated preciſely under the Line, but in regions of the Torrid Zone, which are hotter than the Line itſelf. Thus, the Senegal rolls it's ſtream in the vicinity of Zara, or the Deſert, which, if we

we may credit the concurring teſtimony of all travellers, is the hotteſt part of Africa.

From all this taken together, we have a glimpſe of the neceſſity of two Continents, to ſerve mutually as a check to the movements of the Ocean. It is impoſſible to conceive how Nature could have diſpoſed them otherwiſe, than by extending one of them lengthways, and the other in breadth, in order that the oppoſed Currents of their Ocean might balance each other, and that there might thence reſult a harmony, adapted to their ſhores, and to the iſlands contained in their baſons.

Were we to ſuppoſe theſe two Continents projected circularly, from Eaſt to Weſt, under the two temperate Zones, the circulation of the Sea contained between the two, would be, as we have ſeen, too violently accelerated by the conſtant action of the Eaſt-wind. There could be no longer any communication by Sea, from the Line toward the Poles; conſequently, no icy effuſions in that Ocean, no tides, no cooling, and no renovation, of it's waters. If we ſuppoſe, on the contrary, both Continents extended from North to South, as America is, there would be no longer any oriental Current in the Ocean; the two halves of each Sea would meet in the midſt of their channel, and

and their polar effuſions would there encounter each other with an impetuoſity of commotion, of which the icy effuſions precipitated from the Alps, with all the dreadful ravages which they commit, convey but a faint idea. But by the alternate and oppoſite Currents of the Seas, the icy effuſions of our Pole proceed, in Summer, to cool Africa, Braſil, and the ſouthern parts of Aſia, forcing it's way beyond the Cape of Good-Hope, by the Monſoon which then carries the Current of the Ocean toward the Eaſt; and, during our Winter, the effuſions of the South-Pole proceed toward the Weſt, to moderate, on the ſame ſhores, the action of the Sun, which is there unremitting. By means of theſe two ſpiral motions of the Seas, ſimilar to thoſe of the Sun in the Heavens, there is not a ſingle drop of water but what may make the tour of the Globe, by evaporation under the Line, diſſolution into rain in the Continent, and congelation under the Pole. Theſe univerſal correſpondencies are ſo much the more worthy of being remarked, that they enter into all the plans of Nature, and preſent themſelves in the reſt of her Works.

From any other imaginable order would reſult other inconveniencies, which I leave the Reader to find out. Hypotheſes *ab abſurdo*, are at once amuſing and uſeful; they change, it is true, natural proportions into caricatures; but they have this

this advantage, that, by convincing us of the weakneſs of our own underſtanding, they impreſs us with a deep ſenſe of the wiſdom of Nature. Let us recollect the Socratic method of ratiocination. Do not let us waſte our time in overturning ſyſtems which preſent to us plans different from thoſe we ſee. Let us only deduce conſequences from them: to admit them is complete refutation.

I could farther demonſtrate, that moſt iſlands themſelves conſiſt of double parts, as the Continents, of which, as I have elſewhere ſaid, they are abridgments, from their peaks, their mountains, their lakes, and their rivers, proportioned to their extent. Many of thoſe which are ſituated in the Indian Ocean, have, if I may ſo expreſs myſelf, two Hemiſpheres, the one oriental, the other occidental, divided by mountains which go from North to South, ſo that when it is Winter on one ſide, Summer reigns on the other, and reciprocally; ſuch are the iſlands of Java, Sumatra, Borneo, and moſt of the Philippines and Moluccas; ſo that they are evidently conſtructed for the two Monſoons of the Ocean in which they are placed.

Did time permit, the varieties of their conſtruction, would furniſh me with many curious remarks, tending to confirm, in particular, what I have ſaid, in general, reſpecting the conſonancies of the

the Globe. For my own part, I believe theſe principles of order to be ſo certain, that I am perſuaded it might be poſſible, on ſeeing the plan of an iſland, with the elevation and the direction of it's mountains, to aſcertain it's longitude, it's latitude, and what are the winds which moſt regularly blow there. Nay, I farther believe, that with theſe laſt given, we might, *vice verſâ*, trace the plan and ſhape of an iſland, ſituated in whatever part of the Ocean. From this, however, I except fluviatic iſlands, and ſuch as, being too ſmall of themſelves, are collected into archipelagos, as the Maldivias; becauſe ſuch iſlands have not the centre of all their adaptations in themſelves, but are ſubordinated to the adjoining rivers, archipelagos, and continents.

It is indubitably certain that I advance no paradox, when I compare, between the Tropics, the general form of the iſlands which are expoſed to the two Monſoons, and that of the iſlands which are under the regular Eaſt wind. We have juſt obſerved, that Nature had given, in a certain ſenſe, two Hemiſpheres to the firſt, in dividing them through the middle by a chain of mountains running North and South, in order that they might receive the alternate influences of the Eaſt and Weſt winds, which blow there, by turns, ſix

months

months of the year; but in the iſlands ſituated in the South-Sea and the Atlantic Ocean, where the Eaſt-wind blows inceſſantly from the ſame quarter, ſhe has placed the mountains at the extremity of the Land, in the part moſt remote from the wind, that the brooks and rivers formed from the clouds, which are accumulated by that wind on their peaks, may flow through the whole extent of theſe iſles.

I am ſenſible that I have elſewhere related theſe laſt obſervations, but I here preſent them in a new light. Beſides, ſhould I ſometimes fall into repetition, there can be no great harm in repeating new truths, and ſome indulgence is due to the weakneſs of him who announces them.

OF PROGRESSION.

Progreſſion is a ſeries of conſonances, aſcending or deſcending. Wherever we meet progreſſion, it produces exquiſite pleaſure, becauſe it excites in our ſoul the ſentiment of infinity, ſo conformable to our nature. I have already ſaid, and it cannot be repeated too frequently: Phyſical ſenſations delight us only in ſo far as they awaken an intellectual ſentiment.

When

When the leaves of a vegetable are arranged round it's branches, in the ſame order that the branches themſelves are round the ſtem, there is conſonancy, as in pines; but if the branches of that vegetable are farther diſpoſed among themſelves, on ſimilar plans, which go on diminiſhing in magnitude, as in the pyramidical form of firs, there is progreſſion; and if theſe trees are themſelves diſpoſed in long avenues, decreaſing in height and in colouring, like their particular maſs, our pleaſure is heightened, becauſe the progreſſion becomes infinite.

From this inſtinct of infinity it is that we take pleaſure in viewing every object which preſents us with a progreſſion; as nurſery-grounds, containing plants of different ages, hills flying off to the Horizon in ſucceſſive elevations, perſpectives without a termination.

Monteſquieu has, neverthele ſs, remarked that, if the road from Peterſburg to Moſcow is in a ſtraight line, the traveller muſt die upon it with languor. I have performed that journey, and can confidently affirm, from perſonal knowledge, that the road is very far from being in a ſtraight line. But admitting it to be ſo, the languor of the traveller would ariſe from the very ſentiment of infinity, joined to the idea of fatigue. It is this ſame ſentiment,

fentiment, fo delicious when it blends with our pleafures, which overwhelms us with anguifh unutterable when connected with calamity; as we but too frequently experience. However, I believe that we fhould fink, at length, under the weight of an unbounded perfpective, from it's prefenting infinity to us, always in the fame manner; for our foul has not only the inftinct of it, but likewife that of univerfality, that is, of every poffible modification of infinity.

Nature has not formed, after our limited manner, perfpectives with one or two confonances; but fhe compofes them of a multitude of different progreffions, by introducing that of plans, magnitudes, forms, colours, movements, ages, kinds, groups, feafons, latitudes; and by combining with thefe an infinity of confonances, deduced from reflexes of light, of waters, of founds.

Let me fuppofe that fhe had been limited to the plantation of an avenue from Paris to Madrid, with one fingle genus of trees, fay the fig; I do not apprehend I fhould tire on performing that journey. I fhould fee upon it one fpecies of the fig-tree bearing the fruit called by the Latins *mamillanæ* *, becaufe it had a refemblance to a

* See *Pliny*'s Natural Hiftory, book xv. chap. 18.

woman's

woman's breaſt, in Latin *mamilla:* another ſpecies, with figs quite red, and not bigger than an olive, ſuch as thoſe of Mount Ida; another with white fruit; with black; of the colour of porphyry, and thence called, by the Ancients, *porphyritæ.* In the courſe of this track would likewiſe occur the fig-tree of Hyrcania, loaded with more than two hundred buſhels of fruit; the ruminal fig-tree, the ſpecies under the ſhade of which *Romulus* and *Remus* were ſuckled by a ſhe-wolf; the fig-tree of *Hercules*; in a word, the nineteen ſpecies enumerated by *Pliny*, and a great variety of others, unknown to the Romans and to us. Each of theſe ſpecies of trees would exhibit vegetables of various magnitude; young, old, ſolitary, in cluſters; ſome planted by the brink of rivulets, ſome iſſuing from the clefts of rocks. Each tree would preſent the ſame variety in it's fruits expoſed, on one ſingle foot, if I may uſe the expreſſion, to different Latitudes, to the South, to the North, to the Eaſt, to the Weſt, to the Sun, and under ſhade of the leaves: ſome of them would be green, and juſt beginning to ſhoot, others violet, and cracked, their crevices ſtored with honey. On the other hand, we ſhould find ſome, under different Latitudes, in the ſame degree of maturity, as if they hung upon the ſame tree, thoſe which grow to the North being, in the bottom of valleys, ſometimes as forward as thoſe which, though much

much farther to the South, ripen more ſlowly, from their ſituation on the tops of mountains.

Theſe progreſſions are to be found in the minuteſt of the works of Nature, and of which they conſtitute the principal charm. They are not the effect of any mechanical Law. They have been apportioned to each vegetable, for the purpoſe of prolonging the enjoyment of it's fruit, conformably to the wants of Man. Thus the aqueous and cooling fruits, ſuch as thoſe of a ruddy hue, appear only during the ſeaſon of heat; others, which were neceſſary in the Winter time, from their nutrimental flours, and their oils, as cheſnuts and walnuts, are capable of being preſerved a conſiderable part of the year. But thoſe which are deſigned to ſupply the accidental demands of Mankind, thoſe of travellers and navigators, for inſtance, remain on the earth at all times. Not only are theſe laſt incloſed in ſhells, adapted to their preſervation, but they appear upon the tree, at all ſeaſons, and in every degree of maturity. In tropical countries, on the uninhabited ſhores of the iſlands *, the cocoa-tree bears, at once, twelve or fifteen cluſters of cocoa-nuts, ſome of which are ſtill in the bud; others are in flower; others are knit; others are already full of milk;

* See *Francis Pyrard*'s Voyage to the Maldivias.

and,

and, finally, ſome are in a ſtate of perfect maturity. The cocoa is the ſeaman's tree.

It is not the heat of the Tropics which gives to this tree a fecundity ſo conſtant, and ſo varied; for the fruits of the trees have, in the Indies, as in our climates, ſeaſons of ripening, and after which they are ſeen no more till the ſeaſon returns. I know of no other, except the cocoa-tree and the banana, which are in fruit all the year round. This laſt mentioned plant is, in my opinion, the moſt uſeful in the World, becauſe it's fruit makes excellent food, without any art of cookery, having a moſt agreeable flavour, and poſſeſſing very nutrimental qualities. It produces a cluſter, or aggregation, of ſixty or fourſcore fruit, which come to maturity all at once; but it puſhes out ſhoots of every degree of magnitude, which bear in ſucceſſion, and at all times. The progreſſion of fruits in the cocoa, is in the tree, and that of the fruits of the banana is in the plantation. Univerſally, that which is moſt uſeful, is likewiſe moſt common.

The productions of our corn-fields and vineyards preſent diſpoſitions ſtill more wonderful; for, though the ear of corn has ſeveral faces, it's grains come to maturity at the ſame time, from the mobility of it's ſtraw, which preſents them to all

all the aſpects of the Sun. The vine does not grow in form of a buſh, nor of a tree; but in hedge-rows; and though it's berries be arranged in form of cluſters, their tranſparency renders them throughout penetrable by the rays of the Sun. Nature thus lays men under the neceſſity, from the ſpontaneous maturity of theſe fruits, deſtined to the general ſupport of human life, to unite their labours, and mutually to aſſiſt each other in the pleaſant toils of the harveſt and of the vintage. The corn-field and the vineyard may be conſidered as the moſt powerful cements of ſociety. *Bacchus* and *Ceres*, accordingly, were regarded, in ancient times, as the firſt Legiſlators of the Human Race. The Poets of antiquity frequently diſtinguiſh them by this honourable appellation. An Indian, under his banana and his cocoa-tree, can do extremely well without his neighbour. It is for this reaſon, I believe, rather than from the nature of the climate, which is there very mild, that there are ſo few republics in India, and ſo many governments founded in force. One man can there make an impreſſion on the field of another, only by the ravages which he commits: but the European, who ſees his harveſts grow yellow, and his grapes blacken all at once, haſtens to ſummon to his aſſiſtance, in reaping his crop, not only his neighbours, but the traveller who happens to be paſſing that way. Beſides, Nature, while ſhe has refuſed

refuſed to the corn-plant and the vine the power of yielding their fruits at all ſeaſons of the year, has beſtowed on the flour of the one, and on the wine of the other, the quality of being preſervable for ages.

All the Laws of Nature have a reſpect to our neceſſities; not only thoſe which are evidently contrived to miniſter to our comfort; but others frequently concur to this end ſo much the better, the more that they ſeem to deviate from it.

OF CONTRASTS.

Contraſts differ from contraries in this, that contraries act but in one ſingle point, and contraſts in their general combination. An object has but one contrary, but it may have many contraſts. White is the contrary of black; but it contraſts with blue, green, red, and various other colours.

Nature, in order to diſtinguiſh the harmonies, the conſonances, and the progreſſions of bodies, from each other, makes them exhibit contraſts. This Law is ſo much the leſs obſerved, the more common it is. We trample under foot truths the moſt wonderful, and of the higheſt importance, without paying the ſlighteſt attention to them.

 All

All Naturaliſts conſider the colours of bodies as ſimple accidents; and moſt of them look on their very forms as the effect of ſome attraction, incubation, cryſtallization, &c. Books are every day compoſed, the object of which is to extend, by analogies, the mechanical effects of thoſe Laws to the different productions of Nature; but if they really poſſeſs ſo much power, How comes it that the Sun, that univerſal agent, has not long ere now filled the waters, the dry land, the foreſts, the heavens, the plains, and all the creatures over which he exerciſes ſo much influence, with the uniform and monotonous effects of his light? All theſe objects ought to aſſume his appearance, and preſent only white or yellow to our eyes, and be diſtinguiſhed from each other only by their ſhades. A landſcape ought to exhibit to us no other effects but thoſe of a cameo, or of a print. Latitudes, we are told, diverſify the colour of them. But if Latitudes have this power, How comes it to paſs, that the productions of the ſame climate, and of the ſame field, have not all the ſame tints? Whence is it that the quadrupeds, which are born and die in the meadow, do not produce young ones green as the graſs on which they feed?

Nature has not ſatisfied herſelf with eſtabliſhing particular harmonies in every ſpecies of beings, in order to characterize them; but that they might not

not be confounded among themſelves, ſhe exhibits them in contraſts. We ſhall ſee, in the following Study, for what particular reaſon ſhe has beſtowed upon herbs a green hue, in preference to every other colour. In general ſhe has made herbs green, to detach them from the earth; and then ſhe has given the colour of the earth to animals which live on herbage, to diſtinguiſh them, in their turn, from the ground over which they ſtray. This general contraſt may be remarked in the herbivorous quadrupeds, ſuch as the domeſtic animals, the yellow beaſts of the foreſts, and in all the granivorous birds, which live among herbage, or in the foliage of trees, as the hen, the partridge, the quail, the lark, the ſparrow, and many others, which are of earthy colours, becauſe they live among verdure. But thoſe, on the contrary, who live on dingy grounds are clad in brilliant colours, as the bluiſh tom-tit, and the wood-pecker, which ſcramble along the rind of trees in purſuit of inſects, and many others.

Nature univerſally oppoſes the colour of the animal to that of the ground on which it is deſtined to live. This moſt admirable Law admits not of a ſingle exception. I ſhall here produce a few examples of it, to put my Reader in the way of obſerving thoſe delightful harmonies, of which he

he will find abundant proofs in every climate. There is seen, on the shores of India, a large and beautiful bird, white and fire-coloured, called the *flamingo*, not that it is of *Flemish* extraction, but the name is derived from the old French word *flambant*, (flaming) because it appears, at a distance, like a flame of fire. He generally inhabits in swampy grounds, and salt marshes, in the waters of which he constructs his nest, by raising out of the moisture, of a foot deep, a little hillock of mud, a foot and a half high. He makes a hole in the summit of this little hillock; in this the hen deposits two eggs, and hatches them, with her feet sunk in the water, by means of the extreme length of her legs. When several of these birds are sitting at the same time on their eggs, in the midst of a swamp, you would take them, at a distance, for the flames of a conflagration, bursting from the bosom of the waters.

Other fowls present contrasts of a different kind, on the same shores. The pelican, or wide-throat, is a bird white and brown, provided with a large bag under it's beak, which is of excessive length. Out he goes every morning to store his bag with fish: and, the supply of the day having been accomplished, he perches on some pointed rock, on a level with the water, where he stands immoveable

able till the evening, ſays Father *Du Tertre* *; "as in a ſtate of profound ſorrow; with the head "drooping, from the weight of his long bill, and "eyes fixed on the agitated Ocean, as motionleſs "as a ſtatue of marble." On the duſky ſtrand of thoſe ſeas may frequently be diſtinguiſhed herons white as ſnow, and in the azure plains of the ſky, the paillencu of a ſilvery white, ſkimming through it almoſt out of ſight: he is ſometimes glazed over with a bright red, having likewiſe the two long feathers of his tail the colour of fire, as that of the South-Seas.

In many caſes, the deeper that the ground is, the more brilliant are the colours in which the animal, deſtined to live upon it, is arrayed. We have not, perhaps, in Europe, any inſect with richer and gayer clothing than the ſtercoraceous ſcarab, and the fly which bears the ſame epithet. This laſt is brighter than burniſhed gold and ſteel; the other, of a hemiſpherical form, is of a fine blue, inclining to purple: and, in order to render the contraſt complete, he exhales a ſtrong and agreeable odour of muſk.

Nature ſeems, ſometimes, to deviate from this Law, but then it is from other reaſons of confor-

* Hiſtory of the Antilles.

mity,

mity, according to which all her plans are adjuft-ed. Thus, after having contrafted, with the ground on which they live, the animals capable of making their efcape from every danger by their ftrength, or their agility, fhe has confounded thofe whofe flownefs, or weaknefs, would expofe them to the affaults of their enemies. The fnail, which is deftitute of fight, is of the colour of the bark of the trees which he gnaws, or of the wall in which he takes refuge.

Flat fifhes, which are indifferent fwimmers, fuch as the turbot, the flounder, the plaice, the burt, the fole, and feveral others, which are cut out, as it were, from a thin plank, becaufe they were def-tined to a fedentary life, clofe to the bottom of the Sea, are of the colour of the fands where they find their nourifhment, being fpotted, like the beach, with gray, yellow, black, red, and brown. They are thus fpeckled, I admit, only on one fide; but to fuch a degree are they poffeffed of the feeling of this refemblance, that when they find themfelves inclofed within the parks formed on the ftrand to entrap them, and obferving the tide gradually re-tiring, they bury their fins in the fand, expecting the return of the tide, and prefent to the eye only their deceitful fide. It has fuch a perfect refem-blance to the ground on which they fquat, to con-ceal themfelves, that it would be impoffible for the

the fishermen to distinguish them from it, without the help of sickles, with which they trace small fosses, in every direction, along the surface of the sand, to detect by the touch what the eye could not discern. Of this I have been a witness oftener than once, much more highly amused at the dexterity displayed by the fishes, than at that of the fishermen.

The thornback, on the contrary, which is also a flat fish, and a bad swimmer, but carnivorous, is marbled with white and brown, in order to be perceived at a distance by other fishes; and to prevent their being devoured, in their turn, by their enemies, which are very alert, such as the sea-dog, or by their own companions, for they are extremely voracious, Nature has clad them in a prickly mail, particularly on the posterior part of the body, as the tail, which is most exposed to attack when they fly.

Nature has bestowed at once, in the colours of innoxious animals, contrasts with the ground on which they live, and consonances with that which is adjacent, and has superadded the instinct of employing these alternately, according as good or bad fortune prompts. These wonderful accommodations may be remarked in most of our small birds, whose flight is feeble, and of short duration.

tion. The gray lark finds her ſubſiſtence among the graſs of the plains. Does any thing terrify her? She glides away, and takes her ſtation between two little clods of earth, where ſhe becomes inviſible. On this poſt ſhe remains in ſuch perfect tranquillity, as hardly to quit it, when the foot of the fowler is ready to cruſh her.

The ſame thing is true of the partridge. I have no doubt that theſe defenceleſs birds have a ſenſe of thoſe contraſts and correſpondencies of colour, for I have remarked it even in inſects. In the month of March laſt, I obſerved, by the brink of the rivulet which waſhes the Gobelins *, a butterfly of the colour of brick, repoſing with expanded wings on a tuft of graſs. On my approaching him, he flew off. He alighted, at ſome paces diſtance, on the ground, which, at that place, was of the ſame colour with himſelf. I approached him a ſecond time; he took a ſecond flight, and perched again on a ſimilar ſtripe of earth. In a word, I found it was not in my power to oblige him to alight on the graſs, though I made frequent attempts to that effect, and though the ſpaces of earth which ſeparated the turfy ſoil were narrow, and few in number.

* A ſmall village in the ſuburbs of Paris, noted for it's manufactures in fine tapeſtry, and ſuperb mirrors. H H.

This

This wonderful instinct is, likewiſe, conſpicuouſly evident in the cameleon. That ſpecies of lizard, whoſe motion is extremely ſlow, is indemnified for this, by the incomprehenſible faculty of aſſuming, at pleaſure, the colour of the ground over which he moves. With this advantage, he is enabled to elude the eye of his purſuer, whoſe ſpeed would ſoon have overtaken him. The faculty is in his will, for his ſkin is by no means a mirror. It reflects only the colour of objects, and not their form. What is farther ſingularly remarkable in this, and perfectly aſcertained by Naturaliſts, though they aſſign no reaſon for it, he can aſſume all colours, as brown, gray, yellow, and eſpecially green, which is his favourite colour, but never red. The cameleon has been placed, for weeks together, amidſt ſcarlet ſtuffs, without acquiring the ſlighteſt ſhade of that colour. Nature ſeems to have with-held from the creature this ſhining hue, becauſe it could ſerve only to render him perceptible at a greater diſtance; and, farther, becauſe this colour is that of the ground of no ſpecies of earth, or of vegetable, on which he is deſigned to paſs his life.

But, in the age of weakneſs and inexperience, Nature confounds the colour of the harmleſs animals, with that of the ground on which they inhabit, without committing to them the power of choice.

The

The young of pigeons, and of moſt granivorous fowls, are clothed with a greeniſh ſhaggy coat, reſembling the moſſes of their neſts. Caterpillars are blind, and have the complexion of the foliage, and of the barks, which they devour. Nay, the young fruits, before they come to be armed with prickles, or incloſed in caſes, in bitter pulps, in hard ſhells, to protect their ſeeds, are, during the ſeaſon of their expanſion, green as the leaves which ſurround them. Some embryons, it is true, ſuch as thoſe of certain pears, are ruddy or brown; but they are then of the colour of the bark of the tree to which they belong. When thoſe fruits have incloſed their ſeeds in kernels, or nuts, ſo as to be in no farther danger, they then change colour. They become yellow, blue, gold-coloured, red, black, and give to their reſpective trees their natural contraſts. It is ſtrikingly remarkable, that every fruit which has changed colour has ſeed in a ſtate of maturity.

The inſects, in like manner, having depoſited their robes of infancy, and now committed to their own experience, ſpread abroad over the World, to multiply the harmonies of it, with the attire and the inſtincts which Nature has conferred upon them. Then it is that clouds of butterflies, which, in their caterpillar ſtate, were confounded with the verdure of plants, now oppoſe the colours

and

and the forms of their wings, to thoſe of the flowers; the red to the blue, the white to the red, the *antennæ* to the *ſtamina*, and fringes to the *corollæ*. I was one day ſtruck with admiration at one of theſe, whoſe wings were azure, and beſprinkled with ſpecks of the colour of aurora, as he repoſed in the boſom of a full-blown roſe. He ſeemed to be diſputing beauty with the flower. It would have been difficult to determine which way to adjudge the prize, in favour of the butterfly or of the roſe; but, on ſeeing the flower crowned with wings of *lapis lazuli*, and the azure inſect depoſited in a goblet of carmine, it was obvious, on the ſlighteſt glance, that their charming contraſt greatly enhanced their mutual beauty.

Nature does not employ thoſe agreeable correſpondencies and contraſts in the decoration of noxious animals, nor even of dangerous vegetables. Of whatever kind the carnivorous, or venemous animals, may be, they form, at every age, and wherever they are, oppoſitions harſh and diſguſting. The white-bear of the North announces his approach over the ſnow, by a hollow noiſe, by the blackneſs of his ſnout and paws, and by a throat and eyes the colour of blood. The ferocious beaſts, which hunt for their prey in the gloom of darkneſs, or in the ſolitude of the foreſts, give notice of their preſence by loud roarings, lamentable cries, eyes inflamed,

inflamed, urinous or fetid ſmells. The crocodile, in ambuſh among the flags, upon the ſhores of the rivers in Aſia, where he aſſumes the appearance of the trunk of a tree turned upſide down, betrays himſelf from afar, by ſtrong exhalations of the ſmell of muſk. The rattle-ſnake, concealed in the graſſy ſwamps of America, cannot ſtir without ſounding his ominous alarm. The very inſects which make war on others, are clad in ſable attire, in which colours are harſhly oppoſed, and in which black, particularly, predominates, and claſhes diſagreeably with white, or yellow. The humble-bee, independantly of his buzzing noiſe, announces himſelf by the blackneſs of his breaſt-plate, and his large belly briſtled over with yellow hairs. He appears amidſt the flowers, like a burning coal half extinguiſhed. The carnivorous waſp is yellow, and ſtriped with black, like the tiger. But the uſeful bee is of the complexion of the *ſtamina* and of the *calices* of the flowers, among which ſhe reaps her innocent harveſts.

Poiſonous plants preſent, like noxious animals, diſguſting contraſts, from the livid colours of their flowers, in which black, deep blue, and a ſmoky violet, are in harſh oppoſition with the tender ſhades; from their nauſeous and virulent ſmells; from their prickly foliage, of a black green hue, and claſhing with white on the under-ſide: ſuch

are

are the aconite tribes. I am acquainted with no plant of an aſpect ſo hideous as thoſe of this family, and, among others, that which the French denominate *napel*, the moſt venemous vegetable of our climates. I ſhall not take upon me to determine, whether the embryons of their fruits do not diſcloſe, from the very firſt moments of their expanſion, harſh oppoſitions, which give warning of their malefic characters: if it be ſo, they have this farther reſemblance in common to them with the young of ferocious animals.

Such of the brute creation as are intended to live on two different grounds, are impreſſed with a double contraſt in their colours. Thus, for example, the king-fiſher, which ſkims along rivers, is at once muſk-coloured, and glazed over with azure; ſo as to be detached from the duſky ſhores by his azure colour, and from the azure of the waters by his muſk-colour. The duck, which dabbles on the ſame ſhores, has the body tinged of an aſh-colour, while the head and neck are of an emerald-green; ſo that he is perfectly diſtinguiſhable, by the gray colour of his body, from the verdure of the aquatic plants among which he waddles, and by the verdure of his head and neck, from the dark coloured mud where he finds part of his food, and in which, by another moſt aſtoniſhing contraſt, he never ſoils his plumage.

 The

The ſame contraſts of colour are obſervable in the wood-pecker, who lives on the trunks of trees, along which he ſcrambles in queſt of the inſects that are lodged under their rind. This bird is at once green-coloured and brown; ſo that, though he lives, properly ſpeaking, in the ſhade, he is always perceptible, however, on the trunk of trees; for he detaches himſelf from their duſky rind, by means of that part of his plumage which is of a brilliant green; and from the verdure of their moſſes and lichens, by thoſe of his feathers, which are brown.

Nature oppoſes, then, the colours of every animal to thoſe of the reſpective ground on which it is to be placed; and what confirms the truth of this Law is, that the greateſt part of birds which live on one ground only, have but a ſingle colour, and that one ſtrongly contraſted with the colour of the ground. Accordingly, the birds which live aloft in the air, on the azury ground of the Heavens, or on the boſom of the waters, in the midſt of lakes, are moſtly white, which, of all colours, forms the moſt ſtriking contraſt with blue, and is, conſequently, moſt adapted to render them perceptible at a diſtance. Such are, between the Tropics, the paillencu, a bird of a gloſſy white, whoſe flight is through the ſuperior regions of the air, the heron, the gull, the ſea-mew, which ſkim along

along the ſurface of the azure deep, and the ſwan, fleets of which navigate the extenſive lakes of the North.

There are likewiſe others which, in order to form a contraſt with thoſe that I have laſt mentioned, detach themſelves from the ſkies and from the waters, by their black, or duſky colours: ſuch are, for example, the crow, in our own climates, which is perceptible at ſo great a diſtance in the Heavens, on the white ground of the clouds; many ſea-fowls of a brown and blackiſh colour, as the frigat of the Tropics, which plays through the air, amidſt ſtorm and tempeſt; the mower, or ſea-cutter, a water bird, which grazes with his dark-coloured wings, ſhaped like a ſcythe, the white ſurface of the foamy billows of the Ocean.

From theſe examples, therefore, it may be inferred, that when an animal is inveſted with but one ſingle tint, he is intended but for one ſituation; and when he combines in himſelf the contraſt of two oppoſite tints, that he lives on two grounds, the colours themſelves of which are determined by that of the plumage, or of the hair, of the animal. We muſt be upon our guard, at the ſame time, againſt an unlimited generalization of this Law. We ought to conſider it as harmoniz-

ing with the exceptions which wise Nature has introduced and established, for the very preservation of animals; such as, in general, the whitening of them, to the North, in the Winter season, and on lofty mountains, as a remedy against excess of cold, by arraying them in a colour which reflects the most heat; and embrowning them to the South, during the ardors of Summer, and on sandy districts, and thereby sheltering them from the effects of burning heat, by the intervention of absorbent colours. What evidently demonstrates, that these great effects of harmony are not mechanical results of the influence of the bodies which surround animals, or of the apprehensions of the mother on the tender organs of the fœtus, or of the action of the rays of the Sun on their plumage, according to the explications hitherto attempted by our systems of physics; what evidently demonstrates this, I say, is, that among the almost infinite number of birds which pass their life in the higher regions of the air, or on the surface of the Seas, whose colours are azure, there is not a single bird of the colour of blue; and that, on the contrary, many birds which live between the Tropics, in the bosom of black rocks, or under the shade of sullen forests, are azure-coloured: such are the Batavia hen, which is blue all over; the Dutch pigeon of the Isle of France, and many others.

Another

Another consequence, equally important, may be deduced from these observations; it is this, that all these harmonies are contrived for the use of Man. A blue-coloured fowl, on the azure ground of the sky, or on the surface of the waters, would elude our sight. Nature, besides, has reserved the rich and agreeable colours only for the birds which live in our vicinity. This is so indubitably certain, that though the Sun acts between the Tropics with the whole energy of his rays, on the fowls whose residence is the wide Ocean, there is not a single one of them arrayed in a beautifully coloured plumage, whereas those which inhabit the shores of the Seas, and of the rivers, are frequently dressed in the most gorgeous attire. The flamingo, a tall bird, which lives in the swampy shores of the South-Seas, has a white plumage charged with carmine. The toucan, on the same strands, has an enormous bill of the most lively red; and when he retires from the bosom of the humid sands, where he finds his food, you would be tempted to say, that he has just fished out of them a stump of coral. There is another species of toucan, whose beak is white and black, as finely polished as if it consisted of ebon and ivory. The pintada, with speckled plumage, the peacock, the duck, the king-fisher, and a multitude of other river-birds, embellish, by the enamel of their colours,

lours, the banks of the Aſiatic and African ſtreams. But we find nothing once to be compared with them, in the plumage of ſuch as inhabit the open Sea, though they are ſtill more expoſed to the influences of the Sun.

As a farther conſequence of theſe correſpondencies with Man, Nature has given to the birds which live remote from him, cries ſhrill, hoarſe, and piercing, but which are as proper as their ill-aſſorted colours, to render them perceptible at a diſtance, amidſt their wild retreats. She has beſtowed, on the contrary, ſweet notes and melodious voices on the little birds which people our groves, and domeſticate themſelves in our habitations, in order to heighten our delight, as well by the muſic of their warbling as by the beauty of their colours. We repeat it, in order to confirm the truth of the principles of the harmonies which we are laying down: Nature has eſtabliſhed an order of beauty ſo real, in the plumage and the ſong of birds, that ſhe has endowed with theſe ſuch birds only, whoſe life was in ſome ſort innocent relatively to Man, as thoſe which are granivorous, or which live on inſects; and ſhe has denied thoſe advantages to birds of prey, and to moſt ſea-fowls, which, in general, have earthy colours, and diſagreeable cries.

All

All the kingdoms of Nature preſent themſelves to Man with the ſame correſpondencies, the abyſſes of the Ocean themſelves not excepted. The fiſhes which live on animal ſubſtances, as the whole claſs of the cartilaginous do, ſuch as the ſeal, the ſea-dog, the ſhark, the ſlipper, the thornback, the polypus, and many others, have diſguſting forms and colours. Fiſhes which live in the open ſea, have colours marbled with white, black, brown, which diſtinguiſh them in the boſom of the azure billows, ſuch are whales, blowers, porpoiſes, and others. But it is among thoſe which frequent the duſky ſhores, and particularly in the number of ſuch as are denominated *ſaxatile*, becauſe they live among the rocks, that we find the fiſhes, the luſtre of whoſe ſkin and ſcales far ſurpaſſes all the efforts of the pencil, eſpecially when they are alive. It is thus that legions of mackarel and herrings diffuſe the radiance of ſilver and azure over the northern ſtrands of Europe.

It is around the black rocks which bound the Seas of the Tropics, that the fiſh known by the name of *captain* is caught. Though his colours vary with the latitude, it is ſufficient, in order to convey an idea of his beauty, to detail the deſcription given of it by *Francis Cauche* *, in a ſpecies

* Conſult *Francis Cauche*, his relation of Madagaſcar.

caught

caught on the coaſts of Madagaſcar. He ſays, that this fiſh, which takes pleaſure in the rocks, is ſtreaked in the form of lozenges; that his ſcales are of a pale gold-colour, and that his back is coloured and glazed over with laca, inclining, in ſeveral places, toward vermilion. His dorſal fin and tail are waved with azure, fading away into green toward the extremities.

About the bottom of the ſame rocks is likewiſe found the magnificent fiſh called the *ſardin*, and by the Braſilians *acara pinima*, of which *Marcgrave* has given the figure in his 4th Book, Chap. 6. This beautiful fiſh is adorned with ſcales of at once a gold and ſilver hue, croſſed from head to tail by black lines, which admirably heighten their luſtre. The ſame Author deſcribes a variety of ſpecies of the moon-fiſh, beſides, which frequent the ſame places.

For my own part, I have amuſed myſelf on the rocks of the Iſland of Aſcenſion, in obſerving, for hours together, the moon-fiſh ſporting amidſt the tumultuous waves, which are inceſſantly breaking upon them. Theſe fiſhes, of which there are various ſpecies, have the rounded, and ſometimes ſloping form of the orb of night, whoſe name they bear. They are, beſides, like her, of the colour of poliſhed ſilver. They ſeem deſtined to elude the

the ſagacity of the fiſherman, in every poſſible way; for they have their belly ſtreaked with black croſs-ſtripes, of a lozenge form, which gives them all the appearance of being caught in a net; they ſeem, every inſtant, on the point of being toſſed on ſhore, by the agitation of the billows in which they play; farther, their mouth is ſo ſmall, that they frequently nibble away the bait without touching the hook; and their ſkin, without ſcales, like that of the ſeal, is ſo hard, that the harpoon often miſſes it's blow, be the prongs ever ſo keenly whetted. *Francis Cauche* likewiſe ſays, that it requires a very violent exertion to make an inciſion into their ſkin with the ſharpeſt knife.

It is on the ſame ſhores of Aſcenſion-iſland that we find the *murena*, a ſpecies of lamprey, or eel of the rocks, which is excellent food, and whoſe ſkin is beſprinkled with gilded flowers. It may be affirmed, in general, that every rock in the ſea is frequented by a multitude of fiſhes, of the moſt brilliant colours; ſuch as the gilt-head, the perroquet, the zebra, the roach, and others without number, the very claſſes of which are unknown to us. The more that the rocks and ſhallows of any ſea are multiplied, the more varied, likewiſe, are the ſpecies of the ſaxatile fiſhes which reſort thither. For this reaſon it is, that the Maldivia-iſlands, which are ſo numerous, furniſh themſelves

alone

alone a prodigious multitude of fishes, of very different colours and forms, with the greatest part of which our Ichthologists are hitherto totally unacquainted.

As often, therefore, as you see a brilliant fish, you may be assured that his habitation is near the shore, and that, on the contrary, he lives in the open Ocean, if he is of a dark colour. The truth of this may be ascertained by ourselves, in the channels, and on the banks of our own rivers. The silver smelt, and the blay, whose scales are employed in the formation of mock pearls, play on the strand of the Seine; whereas the eel, of the gloomy colour of slate, takes pleasure to dabble in the midst, and at the bottom of the stream. We must not, however, pretend to generalize these Laws, to the exclusion of all exceptions. Nature, as has been said, subjects all to the mutual adaptation of beings, and to the enjoyment of Man. Thus, for example, though the fishes on the shores have, in general, shining colours, there are, however, several species of them invariably of a dark colour. Such are, not only those which swim indifferently, as soles, turbots, &c. but those also which inhabit some parts of the shores whose colours are lively. Thus the tortoise, which pastures at the bottom of the sea, on green herbs, or which crawls by night over the white sands, there to deposit

posit her eggs, is of a ſhady colour ; thus the lamentine, which enters into the channel of the rivers of America, in queſt of food, in the verdure of their banks, without leaving the water, detaches himſelf from that verdure, by the brown colour of his ſkin.

The ſaxatile fiſhes, which can eaſily inſure their ſafety among the rocks, by agility in ſwimming, or by the facility of finding a retreat in their cavernous receptacles, or of there defending themſelves againſt their enemies, by the armour which Nature has beſtowed, have all of them lively and ſhining colours, the cartilaginous excepted : ſuch are the blood-coloured crabs, the azure and purple lobſters, called *langouſte* and *homard*, and, among others, that to which *Rondelet* has given the name of *Thetis*, on account of it's beauty, the violet-coloured urchins, armed with points and ſpears, the nerits, incloſed in a ſpiral caſe, with roſe and gray-coloured ribbons winding round it, and an endleſs variety of others.

It is very remarkable that all ſhell-fiſh which walk and migrate, and, conſequently, have the power of chooſing their aſylum, are thoſe, in their kind, which have the richeſt colours : ſuch are the nerits which I have juſt mentioned, the purple-fiſh, or Venus ſhell, reſembling poliſhed marble, the

the olives, ſhaded like velvet of three or four colours, the harp, embelliſhed with the tints of the moſt beautiful tulips, the tunny, ſpeckled like the partridge's wing, which walks along under the ſhade of the madrépores; and all the families of the univalves, which force their way into the ſand for ſhelter, the bivalves, as the ducal-cloak, ſcarlet-coloured and orange, and a multitude of other migrating ſhell-fiſh, are impreſſed with colours the moſt lively, and form, with the different grounds of the Sea, ſecondary harmonies totally unknown.

But thoſe which do not change their ſituation, as moſt of the oyſters of the ſeas to the ſouthward, which frequently adhere to the rocks, or thoſe which are perpetually at anchor in ſtraits, as muſcles and the *pinna-marina*, attached to pebbles by threads, or thoſe which reſt on the boſom of the madrépores, like veſſels on the ſtocks, as the Noah's ark, or thoſe which are entirely buried in the heart of calcareous rocks, as the dail of the Mediterranean, or ſuch as are immoveable, from their weight, which ſometimes exceeds that of ſeveral quintals, and pave the ſurface of flats, as the thuilée of the Moluccas, and the large bivalves, as the rocks, the burgos, &c. or thoſe, in a word, which, I believe, are blind, like our land-ſnails, ſuch as lempits, which faſten themſelves, by the formation

formation of a vacuum, on the ſhining ſurface of the rocks, are of the colour of the ground which they inhabit, in order to be leſs perceptible to their enemies.

It is, farther, very highly worthy of obſervation, that though many of thoſe ſedentary ſhell-fiſh are clothed in a brown and ſhaggy outward garment, as thoſe which are called cornets and rollers; or with a black pellicle of the ſhade of the pebbles to which they are attached, as the Magellan-muſcles; or encompaſſed with a mud-coloured tartar, as the lempit and the burgo: they have, under their gloomy upper-coats, pearly appearances and tints, the beauty of which frequently exceed thoſe of the ſhell-fiſh whoſe apparent colours are the moſt brilliant. Thus the Magellan-lempit, cleanſed of it's tartar by means of vinegar, preſents the richeſt of cups, ſhaded with the colours of the fineſt tortoiſe-ſhell, and blended with a burniſhed gold, which is perceptible through a cheſnut-coloured varniſh. The large muſcle of Magellan's ſtrait conceals, in like manner, under it's black coat, the oriental ſhades of the aurora.

It is impoſſible to aſcribe, as in the ſhell-fiſh of India, colours ſo charming, to the action of the Sun on theſe ſhells, covered as they are with tartars and rough coats, and which are the clothing of

of fiſh that live, beſide, in a foggy climate, abandoned for a great part of the year to gloomy Winters and long tempeſts. We may venture to affirm, that Nature has veiled their beauty, only to preſerve it for the enjoyment of Man, and has placed them only on the verge of the ſhores, where the Sea purifies them, by toſſing them about, to put them within his reach. Thus, by a moſt wonderful contraſt, ſhe places the moſt brilliant ſhells, in regions the moſt expoſed to the ravages of the elements; and, by another contraſt, no leſs aſtoniſhing, ſhe preſents to the poor Patagonians ſpoons and cups, the luſtre of which far ſurpaſſes, beyond all contradiction, the richeſt plate of poliſhed Nations.

Hence it may be inferred, that fiſhes in general, and ſhell-fiſh in particular, which have two oppoſite colours, live on two different grounds, as we have obſerved in the caſe of birds, and that thoſe which have only one colour frequent only one ground. I recollect, that on making the tour of the Iſle of France, on foot, along the ſhore of the Sea, I found upon it nerits with an aſh-gray ground, encircled with red ribbons, ſometimes on the duſky rocks, ſometimes on the white madrépores, with their peach-coloured flowers. They contraſted in the moſt agreeable manner, and appeared at the bottom, on the ſea-

plants,

plants, like fruit growing upon them. I likewiſe found there the Venus-ſhell, completely white, with a roſe-coloured mouth, ſwelled backward like eggs, from which too they ſometimes borrow their name. But it is now impoſſible for me to affirm, with certainty, whether they adhered to the dark coloured rocks, or to the white madré-pores.

There are likewiſe to be found, on the coaſts of Normandy, in the diſtrict of Caux, two ſorts of rocks, the one of white marl, detached from the cliffs, the other formed of black biſets, which are amalgamated with the craggy cliff. Now, I never ſaw there, in general, but two ſorts of periwinkles, called by the country people *vignots*, the one very common, and uſed as food, which is quite black, and the other white, with a faint-red mouth. I preſume not, at this diſtance, to aver, whether the white periwinkles attach themſelves to the white rocks, and the black periwinkles to the black rocks, or contrariwiſe, for I did not make the ob-ſervation. But whether they form with thoſe rocks conſonances or contraſts, it is very ſingular that, as there are but two ſpecies of rocks, ſo there ſhould be but two ſpecies of periwinkles. I am inclined to believe, that the black periwinkle ad-heres, in preference, to the black rock; for I have obſerved,

obſerved, in the Iſle of France, that there is neither black-coloured periwinkle, nor muſcle, becauſe there is in thoſe ſeas no pebble, or rock, preciſely of that colour; and I am perfectly certain, that muſcles are always of the colour of the ground on which they live: thoſe of the Iſle of France are brown.

It muſt not be concluded, on the other hand, that ſuch ſhell-fiſh are indebted, for their colours, to the rocks on which they adhere by ſuction; for it would thence follow, that the rocks of Magellan's ſtrait, which produce muſcles and lempits ſo rich in colouring, ſhould be themſelves inlaid with mother-of-pearl, opal, and amethyſt; beſides, every rock maintains ſhell-fiſh of very different colours. You find, at the bottom of the rocks on the coaſt of the diſtrict of Caux, which are loaded with black periwinkles, the azure-coloured lobſter, the crab marbled with red and brown, legions of muſcles of a deep blue, with lempits of an aſh-gray. All theſe fiſhes, when alive, form harmonies the moſt agreeable, with a multitude of marine plants, which fringe thoſe black and white rocks, with their tints of purple, gray, ruſt-coloured, brown, and green; and with the variety of their forms and aggregations, like oaken boughs, tufts of different ſhapes, garlands, feſtoons, and long cordage.

age, agitated by the waves in every poſſible manner. In truth, there is no Painter capable of compoſing ſimilar groups, let him give what ſcope he pleaſes to his imagination. Many of thoſe marine harmonies have eſcaped me, for I then conſidered them as merely the effect of chance. I looked at them, I admired them, but I obſerved them not: I ſuſpected, however, even then, that the pleaſure which their harmonic combination inſpired, muſt be referable to ſome Law with which I was unacquainted.

Enough has been ſaid to demonſtrate how much Naturaliſts have mutilated the fineſt portion of Natural Hiſtory, by retailing, as they for the moſt part do, iſolated deſcriptions of animals and of plants, without ſaying a word of the ſeaſon when, and of the place where, they are to be found. By this negligence they ſtrip them of all their beauty; for there is not an animal, nor a plan exiſting, whoſe harmonic point is not fixed to a certain ſituation, to a certain hour of the day, or of the night, to the riſing, or the ſetting, of the Sun, to the phaſes of the Moon, nay, to the very tempeſts; to ſay nothing of the other contraſts, and correſpondencies, which reſult from theſe.

I am ſo thoroughly perſuaded of the exiſtence of all thoſe harmonies, that I entertain not the ſlighteſt

ſlighteſt doubt, but, on ſeeing the colour of an animal, one might be able to determine, nearly, that of the ground which it inhabits; and that by following up thoſe indications, a road might be paved to very curious diſcoveries. For example, we have not hitherto found on any ſhore the *corne d'ammon*, that foſſil ſo common, and of a ſize ſo conſiderable, in our quarries. I think we ought to look for that brown coloured ſhell-fiſh in graſſy marine places, ſuch as thoſe in which the ſea-tortoiſe paſtures. I do not know that any one has hitherto thought of dragging thoſe bottoms, becauſe of the abundance of ſea-plants which grow upon them, and becauſe they are frequently of a great depth, and at a great diſtance from the coaſts, ſuch as thoſe which ſurround the Cape-de-Verd iſlands, or, according to others, toward Florida, and which, at certain ſeaſons, ſet their herbage a-floating in ſuch quantities, that the Sea is covered with it for the ſpace of thirty or forty leagues, and ſhips can with difficulty force their way through it. If the moſt brilliant ſhells are to be found on dark grounds, duſky ſhells ought to be found on green grounds.

We meet with thoſe contraſts even in the brute ſoils of the earth, as I could evince to demonſtration, did time permit. The following ſimple ſtrain of reaſoning is ſufficient to aſcertain the truth

truth of this. If an uniform and mechanical cauſe had produced the Globe of the Earth, it muſt have been univerſally of the ſame matter, and of the ſame colour: the hills, the mountains, the rocks, the ſands, muſt have been amalgams, or the rubbiſh, of each other; but this is not found to be the caſe in any one diſtrict, of however ſmall extent. In general, as has been ſaid, the ſoil is white to the North, and dark-coloured to the South, in order to reflect the heat in the firſt caſe, and to abſorb it in the ſecond; but notwithſtanding theſe general diſpoſitions, you find in every place, in particular, the moſt wonderful variety. In the ſame canton may be found red mountains, black rocks, white plains, and yellow ſands. Their ſubſtance is as much varied as their colour; there are granites, calcareous ſtones, gypſes or plaſters, and vitrifiable ſands.

In the Iſle of France, the rocks of the mountains are blackiſh, the earth in the vallies is red, and the ſands on the ſhore are white. The rocks there are vitrifiable, and the ſands calcareous. When I was in that iſland, a private adventurer having formed the plan of a glaſs manufactory, the proceſs turned out the directly contrary of what he had propoſed; for, upon lighting up his furnace with great formality and pomp, the ſand, of which he expected to make glaſs,

glaſs, changed into chalk, and the ſtones of his furnace became vitrified. Though it be a rare thing to ſee white earths between the Tropics, white ſands are, however, common there, upon the ſhores. It is certain that this colour, from it's luſtre, and it's refraction to the Horizon, renders low lands perceptible at a very great diſtance, as has been well remarked by *John-Hugo de Linſchotten*, who, but for thoſe ſentinels planted by Nature on moſt of the gloomy and low coaſts of India, muſt there have ſeveral times made ſhipwreck. On the coaſts of the Païs de Caux the ſands are gray, but the cliffs are white; together with this, they are divided into black and horizontal ſtripes of pebbles, which form contraſts very perceptible at a great diſtance.

There are places where we find white rocks, and red lands, as in quarries of mill-ſtone; from theſe reſult very agreeable effects, eſpecially in connection with their natural acceſſories of vegetables, and of animals. I ſhould digreſs too far, were I to enter into any detail on this ſubject. It is ſufficient for me, at preſent, to recommend to Naturaliſts to ſtudy Nature, as the great Painters do; that is, by uniting the harmonies of the three kingdoms. Every one, who ſhall obſerve in this manner, will find a new light diffuſed over the peruſal of

of Voyages and of Natural Hiftory, though their Authors fcarcely ever fpeak of thofe contrafts, except by chance, and without expreffing any doubt about the matter. But every man will be himfelf in a condition to difcover their delightful effects, in what is called brute Nature, I mean that with which Man has not intermeddled. Let me fuggeft the infallible means of diftinguifhing them: it is fimply this, as often as a natural object prefents to you a fentiment of pleafure, you may reft affured that it exhibits fome harmonic concert.

Beyond all doubt, animals and plants of the fame climate have not received from the Sun, nor from the elements, liveries fo varied, and fo characteriftic. A thoufand and a thoufand new obfervations may be made upon their contrafts. He who has not feen them in their natural place, has not yet become acquainted with their beauty, or their deformity. Not only are they in oppofition to the grounds of their refpective habitations, but they are fo likewife between themfelves, as to genus and genus; and it is worthy of remark, that, when thefe contrafts are eftablifhed, they exift in all the parts of the two individuals. We fhall fpeak fomewhat of thofe of plants in the following Study, by fimply glancing at that delightful and inexhauftible fubject.

Thoſe of animals are ſtill farther extended; they are oppoſed not only in forms and in geſtures, but in inſtincts; and with differences ſo decidedly marked, they love to aſſociate with each other, in the ſame places. It is this conſonance of taſtes which diſtinguiſhes, as I have ſaid, beings which are in contraſt, from thoſe which are contrary, or enemies. Thus the bee and the butterfly extract the nectar of the ſame flowers; the ſingle-hoofed horſe, ſnuffing up the wind, with his mane flowing over his graceful neck, delights to amble about airily over the ſame meadows on which the ponderous bull impreſſes his cloven foot; the dull and ſteady aſs takes pleaſure in ſcrambling over the rocks where the nimble and capricious goat friſks and bounds; the cat and the dog live peaceably by the ſame fire-ſide, unleſs where the tyranny of Man has vitiated their diſpoſitions, by a treatment calculated to excite hatreds and jealouſies between them.

Finally, contraſts exiſt not only in the Works of Nature in general, but in each individual in particular, and conſtitute, as well as conſonances, the organization of bodies. If you examine one of thoſe bodies, of whatever ſpecies it may be, you will remark in it forms abſolutely oppoſite, and, nevertheleſs, conſonant. It is thus that, in animals,

animals, the excretory organs contraſt with thoſe of nutrition. The long tails of horſes and bulls are oppoſed to the large ſize of their heads and of their necks, and come in as a ſupplement to the motions of theſe anterior parts, which are too unwieldly to drive away the inſects that infeſt them. On the contrary, the broad tail of the peacock forms a contraſt with the length of the neck, and the ſmallneſs of the head, of that magnificent bird. The proportions of other animals preſent oppoſitions which are no leſs harmonic, nor leſs happily adapted to the neceſſities of each ſpecies*.

Harmonies,

* This Law of contraſts is, if I am not miſtaken, a delicious ſource of obſervation and diſcovery. The women, I repeat it, always nearer to Nature than we are, employ it continually in the aſſortment of the colours which they uſe in dreſs, whereas no Naturaliſt, as far as I know, has ever obſerved that Nature herſelf acts in conformity to it, in the harmony of all her Works. Any one may find a demonſtration of this, without ſtirring beyond his own houſe. For example, though there be among dogs a finer variety of colours, never was any one ſeen red, green, or blue: but they are, for the moſt part, of two oppoſite tints, the one clear, and the other dark, in order that in whatever part of the houſe they are, they may be perceptible on the furniture, with the colour of which they would frequently be confounded.

But, though the colours of thoſe animals be taken, as well as thoſe of moſt quadrupeds, from the two extreme terms of the progreſſion of colours, that is, black and white, I do not recollect

Harmonies, conſonances, progreſſions, and contraſts, muſt, therefore, be reckoned among the firſt elements of Nature. To theſe we are indebted for

lect that I ever ſaw a dog completely white, or completely black. White dogs always have ſome ſpots on their ſkins, were it but the tip of the ſnout, of a dark colour. Such as are black or brown, have ſtreaks of white, or fire-coloured ſpecks; ſo that wherever they are, you can eaſily perceive them. I have farther remarked in them this inſtinct, eſpecially in dogs of a duſky colour; when they want to lie down, they always reſort to a white-coloured ground, in preference to one of any other colour. The Ladies well know this to be the caſe; for if there happens to be a little dog, of a dark hue, in an apartment where company is aſſembled, he hardly ever fails to go to repoſe at a Lady's foot, and on her petticoats.

The inſtinct, which prompts the dog to retire to reſt on white ſtuffs, ariſes from the feeling which he himſelf has of the contraſt affected by the fleas, by which he is frequently tormented. Fleas, in whatever place, reſort to white-coloured objects. If you enter into a room, where there are many of thoſe inſects, if you happen to wear white ſtockings, theſe will inſtantly attract them. They will even croud to a ſingle ſheet of white paper. And this is the reaſon why light-coloured dogs are much more infeſted by them than others. I have likewiſe obſerved, that wherever there are dogs of a white colour, the black and the brown always pay court to them, and give them a decided preference as play-mates, undoubtedly to get rid of their fleas at their expence. In ſaying this, however, I do not mean to throw an imputation of treachery on their profeſſions of friendſhip. Were it not for the inſtinct of theſe minute, black, nimble, nocturnal inſects, toward the white colour, it would be impoſſible to perceive, and to catch them.

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for the ſentiments of order, of beauty, and of pleaſure, which ſpring up in the mind, at the ſight of her Works; and from their abſence ariſe the uneaſy

The common deep-coloured fly reſorts, in like manner, to white and brilliant objects; and this accounts for the tarniſhing of every thing gloſſy and gilded in our apartments. The fleſh-fly delights, on the contrary, to ſettle on the livid colours of meat in a ſtate of putridity. His blue corſelet makes him eaſily diſcernible on that ground.

If we extend theſe contraſts farther, we ſhall find that, not only all ſanguinivorous inſects have the inſtinct of oppoſing their colours to thoſe of the ſituations in which they live, but all carnivorous animals likewiſe; whereas all feeble, gentle, and innoxious animals, as we have ſeen, are furniſhed with means and inſtincts of conſonance with the ground on which they are made to inhabit. Thus has Nature willed it ſhould be, in order that the firſt might be perceived by their enemies, and that the ſecond might be enabled to eſcape them.

From thoſe natural Laws might be deduced a multitude of uſeful and agreeable conſequences, tending to the improvement of our habitations in reſpect of cleanlineſs and conveniency. For example, in order the more readily to deſtroy the inſects which diſturb our ſleep, and which are ſo common in Paris, it would be proper to have the alcoves, the ſtaining, the drapery, the wooden frames of our beds, of white or faint colours; on which inſects might be eaſily perceived.

As to convenience, every one muſt be ſenſible how neceſſary it is that the colours of different pieces of furniture ſhould form a contraſt, for the purpoſe of being diſtinguiſhed with facility. I am frequently at a loſs, for inſtance, to know what is become of my ſnuff-box, becauſe it is black, like the table on which I put

eaſy feelings of diſorder, uglineſs, languor, and diſguſt. They extend equally to all the kingdoms; and though I have limited myſelf, in the ſequel of this Work, to an examination of their effects in the vegetable kingdom only, it is impoſſible for me, however, to deny myſelf the pleaſure of indicating them, at leaſt, in the human figure. It is here that Nature has combined all the harmonic expreſſions in their higheſt degree of excellency. All I can do is to trace a feeble ſketch of it. To acknowledge the truth, this is not preciſely the proper place, neither have I leiſure to arrange more than a part of the obſervations which I have collected, on this vaſt and intereſting ſubject. But

put it down. If Nature had not been poſſeſſed of more intelligence than I am, the greateſt part of her Works would utterly diſappear. It is very aſtoniſhing that Philoſophers, who have purſued ſo many curious reſearches reſpecting the nature of colours, ſhould never have ſuggeſted a ſyllable reſpecting their contraſts, without which nothing would be diſtinguiſhable; or rather, their forgetfulneſs is not ſurprizing: man is inceſſantly purſuing the illuſion which eſcapes him, and neglects the uſeful truth which is lying at his foot.

The harmonies of colours have, beſides, a mighty influence upon the paſſions: but I muſt not preſume to ſay any thing with regard to this, in a Country where the Women employ them with ſuch unbounded ſway. To the Women I ſtand indebted for the firſt idea I had of ſtudying the elements of the Laws, by which Nature herſelf ſtrives to communicate pleaſure to us.

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the little, which I am going to advance, will be ſufficient to overturn the poſition maintained by men of but too high celebrity in the World of Science, namely, That human Beauty is arbitrary.

I will even go ſo far as to flatter myſelf with the hope, that theſe rude Eſſays may induce wiſe men, who love Nature, and who wiſh to be acquainted with her Laws, to dig into the receſſes of this vaſt mountain of hidden treaſure, in which Truth lies buried. Their multiplied illumination will conduct them, without difficulty, through the whole extent of that invaluable mine, of which, groping like a blind man, I have traced only the firſt ſuperficial furrows. They will be led on from one rich vein of precious ore, to another ſtill richer, ſince even I, if I may preſume to ſay ſo, have been able, at the bottom of a valley, and on the ſandy bed of a little rivulet, to pick up a few ſtraggling grains of gold.

END OF THE SECOND VOLUME.